The Mining Journal
AND ATMOSPHERIC RAILWAY GAZETTE,

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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HALLENBEAGLE MINE, CORNWALL.
UNRESERVED SALE OF VALUABLE MINING MATERIALS, AND COUNTING-HOUSE FURNITURE.

MR. TIPPET has received instructions to OFFER FOR SALE, BY PUBLIC AUCTION, on Monday, the 24th day of August inst., at Ten o'clock in the forenoon, at HALLENBEAGLE MINE, near CHACEWATER, the following very

VALUABLE MINING MATERIALS—viz.:

1 STEAM-ENGINE, 70-inch cylinder, with cast-iron beam, two boilers, and the first piece of rod.
1 other STEAM-ENGINE, 66-inch cylinder, with cast-iron beam, three boilers, and the first piece of rod.
1 WHIM-ENGINE, 18-inch cylinder, with boiler, iron cage, &c.
2 Capstans and shears, with oak axles; 2 cat-heads, oak axles, with pulleys and sheaves, complete; capstan and cat-head ropes, 14-inch and under; whim ropes and chains, of different sizes.
Several fathoms of PUMPS, from 19 inches down to 9 inches.
Working barrels, windbores, door and door-pieces, H and top-door pieces, stuffing-boxes and glands, plunger-poles, &c.; several horse-whims, a great variety of new and old iron, of various sizes; railroad ditto, with saddles and waggons; punching-engine, screw stocks, ditto taps and plates, 1 40-inch smith's bellows, 2 30-inch ditto, 3 anvils, 2 vices, a great quantity of smiths' and miners' tools, about half a ton of new and old brass, several tons of cast-iron, flat and other rods, sheaves, faggotted strapping plates, of various lengths and sizes, 2 iron winches, new and old rope, junk, handscrews, iron and other blocks, machine, horse, and winze kibbles, launders, ladders, air-pipes, beams, scales, and weights, dial and stand, a great variety of new and old timber, 3 head-stamps, 22-feet wheel, complete—COUNTING-HOUSE FURNITURE, &c.
The above may be viewed on applying to the agents at the mine; and further particulars obtained on application to Captain John Lean, Camborne; or at the office of Mr. Tippet, in Pydar-street, Truro.—Dated August 12, 1846.

MINING MATERIALS FOR SALE.—TO BE SOLD, BY PRIVATE CONTRACT, at TREVELLANS MINE, in the parish of PERRANZABULOE, the following MINING MATERIALS:—
A 17-inch cylinder STEAM-ENGINE (applied to work double, equal to the duty of a 24-inch), with a boiler of 6 tons.
18 Fathoms of 10-inch PUMPS,
20 " 5-inch ditto (plunger lift).
20 " connection-rods, caps and plates.
15 " bucket-rods, &c.
2 6-inch whim ropes, and other small ropes.
A horse-whim, with kibbles, &c., complete.
Smith's bellows, anvil, a quantity of old timber, and sundry other articles appertinent to the above.
Captain John Murrish, who is on the mine, will show the said materials; and to treat for the same, apply to Mr. W. H. Vice, Truro; or Captain Richard Rowe, St. Agnes.
This advertisement will not appear again.
Truro, July 29, 1846.

TO MANUFACTURING CHEMISTS AND OTHERS.—TO BE SOLD, BY PRIVATE CONTRACT, all that current-going MANUFACTORY, consisting of the PLANT, STEAM-ENGINE, MACHINERY, &c., for making Prussiate of Potash, called the TYNE CHEMICAL WORKS, conveniently situated, with river frontage, and a considerable portion of ground behind, at Heworth Shore, and about 10 minutes' walk from the Felling Station, near Gateshead.
For particulars inquire of Mr. William Fletcher, on the premises; or of Messrs. Wm. Greaves and Son, Forth-lane, Newcastle-upon-Tyne.—Immediate possession may be had, if required.—August 14, 1846.

THE RE-SALE OF THE FORD ABBEY ESTATE.
IN CONSEQUENCE OF THE PURCHASER, THE REV. LAWRENCE GWYNNE, OF TEIGNMOUTH, HAVING FAILED TO PAY THE REQUIRED DEPOSIT.
THE SALE WILL BE PEREMPTORY.

THE GREAT AND PROUD FEATURE OF THE COUNTY IS THE FORD ABBEY ESTATE, WITH ITS NEVER-ENDING DELIGHTS, THE INVALUABLE FISHERY, ABUNDANCE OF GAME, AND SPORT OF EVERY DESCRIPTION, AND "THOUGH LAST, NOT LEAST IN OUR DEAR LOVE," THE MAGNIFICENT FINE ABBEY, PRESENTING BY FAR THE MOST CLASSICAL AND CELEBRATED MONASTERY THROUGHOUT ENGLAND. THE PRESENT LOW RENTAL ARISING FROM THIS FINE PROPERTY, INCLUDING THE VALUE OF THE LANDS IN HAND, AND ON LEASE FOR LIVES, IS ABOUT £2000 A YEAR. IT IS NEARLY ALL TITHE-FREE, AND THE TENANTRY BOTH WEALTHY AND RESPECTABLE.

MR. GEORGE ROBINS feels much gratification in having been preferred to OFFER for PUBLIC COMPETITION, at the Auction Mart, London, on THURSDAY, the 3d of September, at Twelve o'clock, and in One Lot, by direction of the trustees for absolute sale, and in consequence of the Rev. Lawrence Gwynne having become a defaulter by failing to pay the deposit,
THE MOST MAGNIFICENT FREEHOLD INVESTMENT THROUGHOUT ENGLAND.
And in the description that necessarily must follow, Mr. Robins, without the slightest affectation, proclaims that he approaches the task with fear and trembling. The herculean task, however, must be approached.

THE FORD ABBEY DEMESNES
are to be traced back to a very distant day, and they have ever since maintained their proud superiority over
EVERY OTHER MONASTERY IN ENGLAND.
It is a splendidly grand and unique building, altogether realising Lord Byron's glowing description of Norman Abbey—

An old, old monastry once, and now
Still old mansion, of a rich and rare
Mix'd Gothic, such as artists all allow
Few specimens yet left us can compare.

Its classic front EXTENDS TO NEAR THREE HUNDRED FEET.
The order of architecture is in the Tudor style, and may be dated about the time of Henry VIII.; but to describe it as it deserves is felt, to be far beyond the reach of the limited capacity of the composer, and even much wiser heads would be puzzled in the attempt to do it justice—it is indeed
THE GREAT LEVIATHIAN OF THE WEST.
Its fame has been held in the highest veneration from generation to generation, and it is now avowed to have no successful rival amid the vast variety of monasteries to be found throughout the country. The first impression on beholding this
ANCIENT AND CLASSIC PILE.
the writer feels can never be obliterated from his memory; his mind on the instant seemed to be subdued into a most devout and religious state—one of absolute wonder—mixed up with boundless admiration; it was a joyous spectacle, but Mr. Robins cannot too earnestly invoke all those who possess a soul congenial with objects of antiquity to go to the Abbey, and then judge for themselves; they will, with one accord, proclaim how absolutely impossible it is to convey in suitable terms the panegyric which would be awarded to it. However, these preliminary remarks must arrive at a conclusion; the form prescribed to the length of an announcement will not admit of more; but the writer promises, in his printed particulars, to go into a little historical statement that will be acceptable, at least to the learned, and all such as are well versed in our history; and he is fortunately enabled, by the assistance of a very highly talented lady, to aid the historical account of Dugdale by selections of her own, and guided by a judgment and cleverness that has never been held in doubt. To gratify the learned and the curious in distant parts, Mr. Robins has determined to append to the explanatory particulars of the several farms and lands a plan of the whole, with a beautiful drawing of the Abbey.
The situation of this monastery is familiar to most of us. It is on the borders of the three fine counties of Dorset, Devon, and Somerset, 15 miles from Taunton, 3 from Chard, about 50 from Bristol and Bath, and within a delightful ride of 5½ hours from London, which the approaching railway through Chard will reduce to about four hours, and also bring it within 50 minutes' ride of Exeter. The county in which the Abbey is placed will not yield to any other. The reader needs not be reminded that, in days of yore, the taste of the monks in the selection of their lands was never questioned, and, amidst all the good things of this world, they were remarkable for the accuracy of their judgment.
In selecting the best of everything, even
THE FAT OF THE LAND was not
ACCOUNTED TOO GOOD FOR THEIR REFINED TASTE.
This princely property is all freehold of inheritance, surrounded by lawns and pleasure-grounds, with gravelled walks between rows of umbrageous trees of great size and stateliness, interpersed with ornamental waters, cascades, and waterfalls sparkling with foam, and here and there a statue to diversify the scene. The Park, which is one of great beauty, is stocked with deer, whose vension has obtained the highest celebrity for its fatness and fine flavour, while the soft and undulating foliage of its magnificent and
TIME-HONOURED TREES
is perpetually deluding the eye into a belief that it was of almost boundless extent, and imparting just such an air of tempered wildness as would gratify the lover of scenery, without offence to those who are inclined to look rather for the evidences of the superintending hand of care and cultivation. Indeed, everything seems to increase the charms of a spot so rich in Nature's beauties. Of the ornamental waters in front of the Abbey, it is recorded—

Before the mansion lay a lucid lake,
Broad as transparent, deep and freshly fed
By a river, which its softened way did take
In currents through the calmer waters spread.

THE RIVER AXE
so renowned by the disciples of Isaak Walton for its piscatory pleasures and delicious trout, winds, in serpentine beauty, through the fair demesne.

Lost for a space through thickets veering,
But broader when again appearing.

It was here that The branching stag swept down with all his herd,
To quaff a brook which murmured like a bird.

It may be asked, "WHAT MORE CAN MORTALS DESIRE?"
The sporting qualities extend to everything a gentleman's heart can contemplate; by the way, THE MONKS' CELEBRATED WALK
is in high preservation. And to omit a panegyric upon
THE ANCIENT TAPESTRY THAT ADORNS THE STATE ROOMS
would approach sacrilege. It really and truly may be accounted the
WONDER AND ADMIRATION OF THE WORLD.
It fearlessly challenges a rival; and the writer is exceedingly desirous that the reader should not for one moment charge his description with being too vivid. He may rest assured here is no flight of fancy, but a veritable and unassuming report. This description, it is perceived, has already extended beyond the limits prescribed, and therefore (with lament) the writer ends this very imperfect recital, merely observing that the terms used by the foundress of the abbey, when she tendered to the holy fathers her manor of Thorncombe, in exchange for the barren lands of Brightley, stating it to be "well wooded and fertile," are trebly appropriate in the present day—in proof thereof, it may be stated, that the Messrs. Fowler, of Grainge Farm (the principal estate), bred a horn ewe in 1833, which weighed 18 st. 4 lb., and for size and beauty it has never been equalled. The tenantry are very respectable, and without one guinea of arrear; indeed, the latter word could not find a place in their vocabulary. The rent is exceedingly low. The demesne extends to nearly
TWELVE HUNDRED ACRES OF RICH MEADOW, PASTURE, ARABLE, AND WOOD LANDS, MOSTLY TITHE-FREE, AND TAXES MODERATE.
Seeing the abundance of unemployed capital (in spite of the railway mania), and the little value of money, the present is a most influential opportunity of possessing an investment in land which is preferable to all others—for, as it regards the alteration in the corn-laws, it has been observed by Mr. Robins, in another notice of sale, a fact which every day renders more and more certain, that
"WE HAVE ALL BEEN MORE FRIGHTENED THAN HURT."
And this fact has been demonstrated in a manner not to be misunderstood; for since this assertion was in type, Mr. Robins has ratified it, by the sale of two properties exceeding £150,000, at 30 and 33½ years' purchase, on rack rentals.
There are MANORIAL RIGHTS AND PRIVILEGES
of considerable extent, and the principal part of the estate is within a ring fence. The neighbourhood is highly respectable; many lords and nobles are amongst those who prefer to domesticate in this admired county—and within a few miles of the abbey, in the adjoining county of Somerset, are the splendid seats of Earl Poulett and Lord Bridport. Markets are everywhere abundant; in fact, Mr. Robins has taxed his ingenuity in vain to try to discover a fault.
The full descriptions, with plans and a drawing of the famed Abbey, are ready, and may be had at the White Lion Inn, Bristol; White Hart, Bath; Castle, Taunton; Chard Arms Hotel, Chard; Mr. Whitaker, solicitor, 12, Lincoln's Inn-fields, London; Mr. Paul, solicitor, The Close, Exeter; Mr. Salter, solicitor, Chard; the Auction Mart; and at Mr. George Robins's offices, London, at One Shilling each, (this being with the sole view to prevent a useless and unprofitable distribution of the full particulars.)

HEWAS CONSOLS TIN AND COPPER MINE, CORNWALL.—This MINE is divided into 1024 SHARES, of £3 each.—Deposit £1 per share.
All particulars respecting the remaining SHARES in this adventure, may be obtained on application to Messrs. Linthorne, Jones, and Co., agents to the company, 48, THREADNEEDLE-STREET, LONDON.

BANWEN IRON COMPANY, GLAMORGANSHIRE.
Capital £100,000, in 10,000 shares, of £10 each.—Deposit £2 per share,
Payable on complete registration; with two calls of £2 each, beyond which no further calls will be made.
(Registered Provisionally, pursuant to the 7th and 8th Vic., cap. 110.)
DIRECTORS.
SAMUEL BOYD BARNETT, Esq., 17, Dorset-place, Dorset-square
SAMUEL KENTISH, LL.D., Llangerry, Carmarthenshire
CLAUDIUS ARMSTRONG, Esq., Pencoed-hill, Kidwelly
ALGERNON H. SWIFT, Esq., Crosby-hall Chambers, Bishopsgate-street, iron merchant
FREDERICK FOWLER, Esq., Windsor
CHARLES FREDERIC PHILIPS, Esq., Adam-street, Strand
ROWLAND JAY BROWNE, Esq., Ynysarwed, Glamorganshire, and the Inner Temple, London.—(With power to add to their number.)
BANKERS.
Messrs. Spooner, Attwood, and Co., Gracechurch-street.
SOLICITOR.
William Martin Wilkinson, Esq., 44, Lincoln's Inn-fields.
SECRETARY—Sydney Pottinger Harris, Esq.
The object of this company is to work the ironstone and anthracite coal of the best quality lying under 537 acres, (nearly one square mile) situate near to the Banwen mountains, 13 miles from Neath, and 16½ from Swansea, Glamorganshire, and in the immediate vicinity of the well-known Ynyscedwin, Onllwyn, and other highly prosperous iron-works.
The minerals, which have been surveyed by very eminent surveyors, and are proved by working in the adjoining properties to consist of four veins of coal, respectively of 4, 12, 5, and 3 feet in thickness, and veins of iron mine, amounting together to 8 feet in thickness, both the coal and iron mine crop out of the surface of the land; the coal will, therefore, be worked by level, and the mine by patching, without pits or machinery of any sort. There are cheap limestone quarries in the neighbourhood, from which the other works obtain their flux, and building stone and fire-clay are found on the property.
The estate is most favourably situated for transit, as by laying down rather less than a mile and a half of tramway (at an expense of £1200), the works will be placed in communication with the Swansea Canal, and the South Wales, Swansea Vale, and Vale of Neath Railways, and with the ports of Swansea, Neath, and Britton Ferry; there will, therefore, be the most ample means of transit to all parts.
It is proposed to erect six smelting furnaces, each 34 feet high, which will turn out at a low average of 14,000 tons of pig iron per annum, the cost of these (which may be completed within six months), with the necessary offices, including the expense of opening out the mine, the shares allotted to the lessee for his interest under the lease, and a sufficient sum in hand as working capital, will not exceed 6*l.* a share, beyond which no calls will be made. From the coal and ore cropping out on the surface, the economy of patching and level working, and the facilities of procuring limestone, iron may be made (including wear and tear of the plant and works, and the expense of management) for 2*l.* 10s. per ton, (see the prospectus and estimates); and reckoning a sale of the iron at 4*l.* per ton merely, (it is now worth upwards of 5*l.* per ton), the return would be above 35 per cent.; and as at the worst time anthracite pig has not sold at less than 3*l.*, which would leave a net profit of 700*l.*, it follows that under any circumstances the return upon the capital must be very large, varying from 12½ per cent. upwards.
It is quite unnecessary to touch upon the prospect of the iron trade, as the ordinary supply is only equal to the ordinary demands, and there is an additional demand of at least 3,000,000 tons (two years' entire make) for English railways alone, hanging over the market. Indeed the dividend of 20 per. cent., declared by the New British Iron Company at their last meeting (see the report in the *Mining Journal* of July 11, 1846), sufficiently shows the prosperity of the trade. The liability of shareholders will be limited by the deed of settlement, and by the incorporation of the company to the amount per share to be called up—viz: 6*l.* per share. For a more full detail see the prospectus and estimate, which may be had, where plans of the property and the minerals, surveyor's report and sections and specimens of the minerals, may be inspected.
Applications for shares, with a reference in the usual form, may be made to Mr. T. Thomas, mining agent, 80, Old Broad-street; to the secretary, S. P. Harris, Esq., at the offices of the company, 23, Threadneedle-street; and to the solicitor, W. M. Wilkinson, 44, Lincoln's-Inn-fields.

MEDLYN TIN AND COPPER MINES COMPANY.
ON THE COST-BOOK SYSTEM.
In 2560 shares, of £10, and in certificates of five shares each.
Deposit £3 per share.
£1 *payable on receipt of certificate, and the remaining £2 in instalments of £1 per share, when called for.*
These MINES are situate in the parish of WENDRON, and county of CORNWALL, equidistant between the port of Penryn and the town of Helston—thus admitting of the supply of materials to the mines at a very moderate rate of cost.
This sett is held under a new lease of 21 years, from the Duchy of Cornwall, at dues of 1-15th produce, whilst worked by water-power, and 1-18th when worked by a steam-engine; and comprises some eight or nine very rich and promising tin and copper lodes—running east and west through the sett—and from which considerable returns in tin, of the finest quality, have been raised during the present and former workings.
In consequence of the mines cutting rich during the last working by private individuals, an influx of bottom water was cut, which overpowered the water machinery, and renders the erection of an efficient steam-engine now necessary.
To accomplish this object, and for the purpose of raising sufficient capital to meet the required expenditure, as well as to prosecute the working of the mines with effect, the proprietors have consented to dispose of one-half share in the said mines, and to place the whole under the management of a highly respectable company, now under formation.
Applications for prospectuses, and a limited number of shares, may be made to the committee of directors, at the offices of the company, 35, Moorgate-street, where specimens of the produce, in tin ore and black tin, may be seen, and every other information obtained.
Medlyn Tin and Copper Mines Company, Offices, 35, Moorgate-street.

CHATHAM NICKEL AND COBALT MINING COMPANY.
SITUATE AT CHATHAM, STATE OF CONNECTICUT, UNITED STATES.
Capital £20,000, in 4000 shares, of £5 each.—Deposit £1 per share.
This company is incorporated pursuant to the law of the State of Connecticut, which limits the liability of the shareholders to the amount paid upon their shares.
"The ores have been analysed by eminent practical chemists of both England and America, and have been found to average 18 per cent. cobalt and nickel—about 4 per cent. cobalt, and 12 to 18 per cent. nickel."
Application for shares, and full particulars, to be obtained to the solicitors of the company, Hull Terrell, Esq., 30, Basinghall-street; and of Mr. R. E. Little, stockbroker, 11, Warnford-court, Throgmorton-street, London.

OFFICE FOR PATENTS, 7, STAPLE INN, HOLBORN.
J. MURDOCH (successor and late assistant to Mr. Hebert)
Informs INVENTORS and PATENTEES, that, at his OFFICE, they can obtain
REFERENCE TO A CLASSIFIED LIST OF PATENTS,
(THE ONLY ONE EXTANT), which shows at one view all the Patents ever granted for any particular object, whereby they may save much trouble and expense, and procure information not otherwise obtainable. BRITISH and FOREIGN PATENTS OBTAINED, and USEFUL and ORNAMENTAL DESIGNS REGISTERED.
SPECIFICATIONS carefully prepared, and REPORTS of ENROLLED SPECIFICATIONS furnished on moderate terms.
FINISHED and WORKING DRAWINGS executed with accuracy and dispatch.

JAMES LANE, MINING SHAREBROKER,
75, OLD BROAD-STREET, LONDON.

JOHN HARVEY, SHAREBROKER AND ASSAYER,
LISKEARD, CORNWALL.

WILLIAM TRENERY, DEALER IN RAILWAY AND MINING SHARES.—ESTABLISHED TEN YEARS.
OFFICES, No. 50, THREADNEEDLE-STREET, LONDON.

MESSRS. LINTHORNE, JONES, AND CO., STOCK, MINING, AND SHARE AGENTS,
*** Every information will be afforded as to the markets and prices of the above, by application (post-paid) at their offices,
48, *THREADNEEDLE-STREET, LONDON.*

WILLIAM H. SMITH, MINING SHARE AGENT,
10, *WARNFORD-COURT, THROGMORTON-STREET.*
*** SHARES in many valuable MINES FOR SALE, and every information will be afforded, on application.

WILLIAM FOX AND SON, No. 53, CASTLE-STREET, LIVERPOOL, have always on SALE PIG-IRON, RAILWAY BARS, CHAIRS, and IRON of every description.—TIN PLATES, WIRE, &c.

MINING OFFICES, No. 1, ST. MICHAEL'S-ALLEY,
CORNHILL, LONDON.
Messrs. WATSON & CUELL have received instructions to PURCHASE SHARES in East Tamar Consols, South Tamar, Copiapo, East Rose, Alten, Stray Park, and Mary Ann Mines; and have FOR SALE, SHARES in all the best DIVIDEND MINES in Cornwall and Devon, paying from 18 to 20 per cent. per annum.

THOMAS P. THOMAS, MINE AGENT AND DEALER IN RAILWAY AND OTHER SHARES,
No. 80, OLD BROAD-STREET, LONDON.
T. P. THOMAS, in returning his most grateful thanks to his friends for the support they have given him, begs to assure them, that, from his personal knowledge of the leading mining captains and adventurers in Cornwall and Devon, as well as the principal adventurers in London and in the country, he is enabled at all times to procure the earliest information as to the alterations in the different MINES, and has every facility for the PURCHASE and SALE of SHARES at fair market prices, without advertising what particular shares he is a buyer or seller of—considering such a mode injurious to his principal.
T. P. T. having lately returned from the county of Cornwall, and having personally inspected the underground workings of many of the mines, will be happy to give any information respecting them.

MINING OFFICES, REMOVED FROM 16, CORNHILL, to 1, THREE KING COURT, LOMBARD-STREET.—Mr. R. TREDINNICK (of Cornwall), having established PRACTICAL AGENTS and CORRESPONDENTS in every MINING DISTRICT, whereby he obtains early and accurate information respecting MINES, proffers his services to capitalists and adventurers in the PURCHASE and DISPOSAL of SHARES.

MINING PROPERTY.—CAPITALISTS who are disposed to INVEST in CORNISH and FOREIGN MINES, will find the present opportunity very favourable for so doing. From large sums having been lately diverted from such investments for railway speculations, standard mines are now selling at prices that will pay the purchaser 20 per cent. per annum for his outlay. There are also other mines that are on the eve of paying dividends, which can be recommended with confidence.
Applications to be made to Mr. JAMES HERRON, mining agent, No. 3, Adam's-court, Broad-street, London.

TO MINING SPECULATORS.—THOMAS LITTLE, MINE AND SHARE BROKER,
Begs to inform his friends, and speculators generally, that he has BUSINESS to transact in the following SHARES:—Wheal Concord, Devon and Courtney, Condurrow, South Basset, West Basset, Wheal Cleveland, Ting-Tang, Dolcoath, Hawkmoor, &c.—Address,
MR. LITTLE, HALL OF COMMERCE, LONDON.

FRANCIS PRYOR, MINE AND SHARE BROKER,
COMFORD, GWENNAP, CORNWALL.
F. P. returns his grateful acknowledgments for the kind and liberal support he has received from gentlemen connected with the mining interest of Cornwall, &c., and begs to announce, that he has now added to the above business, that of AUCTIONEER and APPRAISER, and hopes, by punctuality and strict attention to the interest of those who may entrust him with their favours, to merit support.
N.B.—Mines inspected, and every information given.
One-half the amount advanced on any goods consigned to him for sale, by auction.
Dated Comford, July 22, 1846.

CONSOLIDATED TRETOIL MINING COMPANY.—The directors of this company hereby give Notice, that the ANNUAL GENERAL MEETING of the shareholders will be HELD at the offices of the company, 8, George-yard, Lombard-street, London, on Tuesday, the 25th inst., at One o'clock P.M. precisely.
HENRY THOMAS, Secretary.
Mining Offices, 8, George-yard, Lombard-street, London, August 5, 1846.

NOTICE TO THE MANAGERS OF MINING COMPANIES,
SMELTING WORKS, &c.
Mr. MITCHELL (late Mitchell and Field) begs to announce, that ASSAYS and ANALYSES of all descriptions of ORES, MINERALS, and FURNACE PRODUCTS, are conducted at his LABORATORY, 23, HAWLEY-ROAD, KENTISH TOWN, to which direction all communications are to be addressed.
N.B.—Instruction in all branches of assaying and mineral analysis as usual.

THE PATENT SAFETY FUSE,
FOR BLASTING ROCKS IN MINES, QUARRIES, AND FOR SUBMARINE OPERATIONS.—This article affords the SAFEST, CHEAPEST, and most EXPEDITIOUS MODE of effecting this very hazardous operation. From many testimonies to its usefulness with which the manufacturers have been favoured from every part of the kingdom, they select the following letter, recently received from John Taylor, Esq., F.R.S., &c.:—"I am very glad to hear that my recommendations have been of any service to you; they have been given from a thorough conviction of the great usefulness of the Safety Fuse; and I am quite willing that you should employ my name as evidence of this."
Manufactured and sold by the Patentees, BICKFORD, SMITH, and DAVEY, Camborne, Cornwall.

TO ENGINEERS, RAILWAY CONTRACTORS, MINING AGENTS, IRONMASTERS, AND OTHERS REQUIRING FINE GREASE for MACHINERY and AXLES of every description.—JOSEPH PERCIVAL'S IMPROVED ANTI-FRICTION GREASE is—after trials on machinery and axles of every kind where constant friction is kept up—admitted to be the most useful, economical, and best preparation of the kind ever offered to the public.
References to scientific and practical men can be given, and testimonials shown of its great excellence.—Samples forwarded on application at the manufactory, Green-street, Wellington-street, Blackfriars-road, London.

IMPORTANT TO ENGINEERS, MANUFACTURERS, RAILWAY AND STEAM-BOAT COMPANIES.
Messrs. W. & C. MATHER beg to call the attention of the ABOVE PARTIES to their
IMPROVED ELASTIC METALLIC PISTONS.
The PRINCIPAL FEATURE and ADVANTAGE of THIS IMPROVEMENT is—
1. Its great ELASTICITY and SELF-ADJUSTING PROPERTIES, which enable it to yield to any inaccuracy of the cylinder, whether oval or taper, and to move with the least possible friction.
2. Its extreme SIMPLICITY and LIGHTNESS, consisting of only two pieces of metal, having the vertical and lateral pressure in due and proper proportion, independent of each other.
3. It takes the LEAST possible SPACE, and is well adapted for air and water-pumps, as it allows of a larger water way.
Messrs. W. & C. MATHER feel confident that it is the BEST ELASTIC METALLIC PACKING yet known, for the above reasons.
Models may be seen at the Salford Iron-Works, Manchester; at W. Barker's, engineer, Newton-Moor; and also at J. Mather's, engineer, Beaufort-street, Chelsea, London.

PATENT IMPROVEMENTS IN CHRONOMETERS, WATCHES, AND CLOCKS.—E. J. DENT, 82, Strand, and 33, Cockspur-street, watch and clock maker, BY APPOINTMENT, to the Queen and his Royal Highness Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks, is secured by three separate patents, respectively granted in 1836, 1840, 1842. Silver lever watches, jewelled in four holes, 6 gs. each; in gold cases, from £8 to £10 extra. Gold horizontal watches, with gold dials, from 8 gs. to 12 gs. each.
DENT'S PATENT DIPLIEDOSCOPE, or meridian instrument, is now ready for delivery. Pamphlets containing a description and directions for its use 1s. each, but to customers gratis.

IMPORTANT TO RAILWAY COMPANIES.
PATENT KAMPTULICON COMPANY, 18, CORNHILL.
This company having completed their new factory, are prepared to supply railway managers and contractors with an elastic material (perfectly non-absorbent) to place between the rails and sleepers, and between the frames and bodies of carriages, to prevent jarring, and, consequently, wear and tear. The elastic planking is strongly recommended to be used for the backs and sides of carriages, to prevent splinters when accidents occur.
By order of the board, F. G. GREVILLE, Secretary.

SEYSSEL ASPHALTE COMPANY—CLARIDGE'S PATENT.—ESTABLISHED MARCH, 1838,

FOR WORKING THE MINERAL ASPHALTE ROCK OF PYRIMONT SEYSSEL,
A Bituminous Rock, situate on the Eastern side of the Jura.

PRINCIPAL DEPOTS:
ROUEN, MARSEILLES, AND STANGATE,
Surrey Side of Westminster-bridge, London.

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20	1 0 2	2 0 4	20	20	31	31	39
30	1 5 10	2 11 8	30	26	38	36	46
40	1 15 9	3 11 6	40	32	48	42	55
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The late Frightful Catastrophe at East Wheal Rose Mine.

BY HENRY DANIEL.

The morning shone, as fair a morn as ever smiled on earth,
Since from the sun's unceasing fount the glorious light had birth;
The pastoral vales and breezy hills, in summer beauty clad,
Seem'd Edens, where the human heart could never long be sad.
Who had believed that morn so bright, the herald of distress,
Or that it wore a traitor's smile beneath such loveliness?
The deep blue Heaven without a cloud—so calm, so wondrous fair—
Who had believed the thunder-shaft of death was lurking there?
There is a valley where the works of human hands are seen,
Where many a darkling shaft descends below the surface green;
'Tis there the miner plies his task, in peril night and day,
To gather riches at a price that worlds could ne'er repay.
The "*bucker*" sings some lively tune, for light of heart is she—
The whistling "*whim-boy,*" with a jest, laughs out right merrily;
The iron giant lifts his arm, by thee, thou wizard, steam!
And from the sunless caves of earth is drawn the gushing stream.
The work goes on, and no one dreams of death, or danger near;
But, oh! when brightest looks the world, then have we most to fear,
When lips breathe friendship, and when eyes so kindly glance the while—
Prepare thee, then, to bear the change of coldness for a smile.
Deep booming on the startled ear the thunder voices crash—
Peal after echoing peal resounds, and flash succeedeth flash;
Behold! a sudden darkness spreads across the sultry heaven,
And, in a blaze of dazzling light, the pall-like cloud is riven,
As if the deep had broken there the spell of its control,
Wide sweeping from the deluged hills, the gathering waters roll;
Down—down—the mighty torrent pours—Great God! it thunders down!
And in their agony unseen, the gasping victims drown.
Yet, dauntless in this hour of dread, the unconquerably brave,
(True heroes!) venture limb, and life, to shelter or to save.
Above the fearful place of doom, is heard the widow's cry,
And unavailing tears bedim the lonely orphan's eye;
And stern strong men, of iron nerve, are seen to quake and quail,
And not a lip but trembles there—no cheek but what is pale.
Above the thunder's pealing sounds is heard the torrent's roar—
The valley seemeth to the eye a sea without a shore;
And, lo! the early rescued cling to kibble and to chain;
Down with the speed of lightning—down again—again in vain!
Link after link, the last appears without its living freight;
No word is breath'd, but speaking looks proclaim it all too late.
Too late! the death knell of our hopes and dreams, so bright before
The sentence passed by Destiny, to be revoked no more.
'Tis mockery now all human aid—but yet the human will,
So strong is nature in the heart, would nobly struggle still.
The "shop," the "bucking-shed," the "floor," in ruin swept away,
Like leaves before the whirlwind's wing in autumn's brown decay;
What is the power, or pride of man, in which he takes delight,
When all the elements at war, arouse them in their might?
With solemn tone from Newlyn's tower is heard the funeral bell,
The living of the shrouded dead have ta'en their last farewell;
But not in vain the living plead to Britain's liberal land,
The mitred and the rich step forth, with open heart and hand.

STATE OF THE MINING DISTRICTS.

The following are extracts from the report (just presented to Parliament by command of her Majesty) from the commissioners appointed to inquire into the operation of the Act 5th and 6th Victoria, c. 29, and into the state of the population in the mining districts, 1846. This report is extremely lengthy; and the following are only a few of the portions of it which will merit quotation and special attention. It commences thus:—

I have the honour to acquaint you, in this my third annual report, that the Act of Parliament by which females are excluded from working in mines and collieries, and other regulations made for the benefit of persons engaged in that species of labour, is generally observed in the portions of the mining districts to which I have this year been able to give my attention, some localities excepted, where either the neglect or opposition of a few employers, or the inveterate habits of the people, oppose an obstacle to the uninterrupted observances of the law. I have reason to believe, that the employment of females below ground in any part of the mining districts is reduced to a small number; and I have received increasing testimonies to the good effects arising to the mining population from the continuance of that degrading occupation.

In my two previous reports, I have had occasion to mention that legal proceedings have been frequently necessary to cause the removal of females from the large collieries at Clackmannan. In consequence of communications from me, the Procurator-Fiscal of Alloa commenced another prosecution against the oversman and one of the workmen of that colliery. The cases were submitted to the Crown agent in Edinburgh, and the Advocate-Deputy was sent by him to Alloa to conduct them. The result was, on the 15th of December, a conviction, and a fine of 5*l.* each upon the oversman and the workman. On that day the proprietor of the colliery, Mr. James Rayner Wilson, as stated by the Sheriff-Depute, John Taite, Esq., "appeared before the Sheriff Substitute, and deposed on oath that the employment of females at that time had taken place without his consent, concurrence, or knowledge." Notwithstanding this, the Fiscal informed me that two days only after this trial, no less than 40 females again went into Mr. Wilson's pits to work. A lengthened and laborious investigation took place, and the case was reported to Crown counsel, who, on the 11th of March, instructed the Fiscal "to serve a complaint" upon Mr. Wilson. The complaint was accordingly served, charging Mr. Wilson with "having employed, or having allowed or permitted to be employed, within the pits at the Clackmannan Colliery 18 females." The case came on for trial on the 21st of March, before Mr. Sheriff Tate. Mr. Wilson appeared, and *pleaded guilty* to having permitted the employment of two out of the 18. The Advocate-Depute, who had been sent from Edinburgh to conduct the case on the part of the crown, deemed it prudent to accept this plea, and the Sheriff then sentenced Mr. Wilson to pay a fine of 20*l.*, and failing payment, or sufficient distress by "pounding," to be committed to Alloa prison for the period of one month. There was a large attendance of colliers in the court, and one or two coal masters from Fifeshire and the surrounding neighbourhood.

It is satisfactory to see, that since the termination of the strike in July, 1844, more activity has been manifested in building school houses, providing trained teachers, and opening schools, at which the payments are so moderate (1d. or 2d. per week) as to leave no excuse to the parents for neglecting to send their children. The old private schools, where the payment required was from 3d. to 6d. per week, were often preferred by the parents to the old description of national schools, where the payments were much less, but where the children, left chiefly to the monitors, advanced slowly. The new schools, under properly qualified teachers, unite cheapness with excellence. Some of the young men now conducting these schools have passed through the prescribed course at the institution for training schoolmasters at Durham. One was trained at Battersea. They will be found valuable assistants in the important work of enlightening and forming the minds of the rising generation.

At nearly all the large mining villages in the two counties where exertions of this kind were wanting, they have been made within the last two years with every promise of success; and additional efforts are in contemplation in behalf of localities still insufficiently provided for.

The Marquis of Londonderry, has adopted very liberal and effectual measures, to place the opportunities of a sound education within the reach of all the inhabitants of his populous mining villages. His Lordship's managing agent, Mr. Hindhaugh, informed me that the cost to Lord Londonderry, of the schools now in operation, will amount to no less a sum than 800*l.* a year. By his Lordship's directions, Mr. Hindhaugh, ascertained, in the course of last year, the number of children of an age for education in the villages of Pensher, Rainton, and Piddington. On his Lordship's property, they were found to amount to about 1000, of whom about 600 are now, and have been since January last, at good schools, at which they pay only 1d. a week. The schools formerly in existence were partly supported by Lord Londonderry, at a cost of about 40*l.* a year.

With respect to Monmouthshire and Brecon, the Commissioner writes:—

The demands of duties in other quarters, had, until December last, prevented my giving attention to the manner in which the Act of Parliament, with the administration of which I am charged, is observed in the mineral district of Monmouthshire and Brecon, or to the state of the mining population in that district. I proceeded thither on the 3d of that month, having previously intimated to the proprietors and managers of the various iron and coal works my intention of visiting the district, and bespeaking their co-operation, if necessary, towards giving full effect to the law.

I found that the main provisions of the Act had not been generally attended to. In a few of the principal works, they had, I believe, been pretty strictly observed, and in others partially; but the employment of females underground was acknowledged to have been continued in eight of the works, and also of boys under 10 years of age in several more. The payment of wages in public-houses, by contractors, was also very common. About 70 females were, as I was informed by the respective managers, dismissed from their employment underground, in the works alluded to, immediately on the receipt of my letter on the subject, and many boys under 10 were removed from the mines at the same time throughout the district.

The demand for labour being still so great, and wages so high, it is to be hoped that nothing more than a slight and temporary inconvenience may have been suffered by any parties, in consequence of this change. The managers or proprietors of the various works with whom I commmuicated on the spot, most readily undertook, almost without exception, to do everything in their power to prevent any future infringements of the Act in these particulars. All parties, however, were anxious that an impartial vigilance should be exercised throughout the district, to prevent any laxity arising in any quarter, by which the rest might be subject to disadvantage. The facilities which exist for avoiding compliance with the law, especially in some localities, make this the more necessary. I have, therefore, been in communication with professional gentlemen, residing on the confines of the district, who have taken steps under my direction towards enforcing the penalties of the Act in the above particulars, as mentioned at the commencement of this report.

IMPORTANT AS TO LIABILITY OF ADVENTURERS.

We last week gave full particulars of the important case, Ricketts, Enthoven and Co., bankers at Penzance, *v.* Messrs. Bennett and Field, shareholders in the Wheal Providence Mine, for a balance of account, alleged to be due by the adventurers: we now give, as we promised, the legal arguments, and the summing up of the learned judge.—Mr. BUTT submitted that Wheal Providence was a mine on the Cost-book Principle, and as such was exempted from the operation of the Act 7th and 8th Victoria, c. 110, for the regulation of joint stock companies. They contended that this was not a case of ordinary partnership, and that the plaintiffs were bound to show either an express or implied authority on the part of Alexander Robinson to borrow money on account of the adventurers. There was no express authority given him, for this he had himself denied; and they submitted that no implicit authority could be shown. If it were said, that as an agent he had authority, the case of Hawtayne *v.* Bourne, 7th M. and W. 595, showed the contrary; and if it were said, that as a partner or co-adventurer in the mine he had authority, the case of Dickenson and Valpy, 10. Barn. and Cress. p. 138, showed the reverse. The learned counsel also imputed some degree of negligence to the bankers.—Mr. CROWDER and Mr. SMIRKE then replied, contending that there was nothing in the transactions to raise the suspicions of the bankers, this being no "bubble mine." With regard to the case of Dickenson and Valpy, Mr. Crowder argued that it only decided that one partner in a mining company could not bind another by the negotiation of a bill of exchange or promissory note; in this case, however, the adventurers had received their dividends by checks. The case of Hawtayne and Bourne, he contended, did not apply to the present question. As a copartner Mr. Alex. Robinson had authority to open an account with the bank; and it was no answer to say, that he had committed frauds upon the other partners. He then referred to the case of a brewer's partnership recently tried before Mr. Justice Wightman, where one partner had drawn money, and appropriated some part of it to his own purposes, and yet that was no answer when the bank came to claim their money.—Mr. SMIRKE referred to a case tried by Baron Alderson, where in a firm at Basingstoke, one partner had borrowed money to a considerable amount during his life-time, and appropriated it to his own use. It was an attorney's partnership, and Baron Alderson said there was no difference between partnerships. Mr. Smirke further said, that *primâ facie* it lay on the defendants to show that the plaintiffs had been cognisant of the fraud committed, and had assisted in carrying it into effect.—Mr. BUTT replied, again asserting that the present was not a case of ordinary partnership.—Mr. BARON PLATT intimated that the case had better go to the jury, otherwise there might be some little shred of evidence, which it might hereafter be said should have been submitted to them. The learned judge then proceeded to sum up the case. This action was brought to recover the sum of 3668*l.*, which was alleged to be a balance due from the defendants, who were adventurers in Wheal Providence, to the plaintiffs, who were bankers at Penzance; and the whole question the jury would have to decide upon the evidence laid before them was, whether Alexander Robinson, in borrowing the money which constituted the balance, had authority to borrow it upon the credit of the defendants. The case had been likened to that of an ordinary partnership; but it occurred to him, that it was not like an ordinary case of partnership. It had been contended by the counsel for the plaintiffs, that the mere relation of a coadventurer was a sufficient authority by law for Mr. Robinson to pledge the credit of his coadventurers as partners. He took leave to deny that position; the relation of coadventurer in a mining concern, in his opinion, was not sufficient in point of law to confer upon him that authority. Nor did the mere character of a purser or manager of a mine, confer upon that purser or manager the authority to pledge the credit of the adventurers in the mine. But though a purser, manager, or coadventurer, might not have this authority otherwise, it might be expressly conferred upon him, or it might be conferred by circumstances. That, therefore, divided the question into two parts—was there in this case an express authority, or was there an implied authority? As to direct authority, that was denied by Robinson himself, who said "I was never authorised; I never informed the defendants; I never told them after it was done." The only authority that remains is that by implication—was the authority thus exercised incidental to the management of a mine? The learned judge then read over the evidence of Alexander Robinson, commenting upon the fact of his borrowing money to pay dividends to the adventurers—the adventurers not knowing the source whence the money came. He also remarked upon Robinson's placing, by these 5*l.* dividends, nearly 500*l.* each time they were declared in his own and his son's pockets, they holding 99 shares out of the 128. Through these dividends the price of shares rose to upwards of 100*l.* each, and Robinson sold at that rate 12 or 15 shares which only cost him 16*l.* each. The learned judge remarked, that it had been said this was not a bubble company; but that was precisely the principle upon which bubble companies were started, and shares got up in the market to delude people. He also commented upon the fact of the entries of merchants' accounts being postponed in the cost-book; and the sum of 1000*l.* in the bankers' book being acknowledged to be unconnected with the mine. The check by which payment was transmitted through Glynn and Company, on account of Messrs. Ricketts, to one of the defendants, and a letter to another, the learned judge held conveyed to those defendants no knowledge of Mr. Robinson's transactions with the bank. The learned judge concluded by saying, that if the jury believed the authority exercised by Robinson to be incidental to the management of a mine—if the power of drawing and pledging the credit of the adventurers was the ordinary course of mine management—they would find a verdict for the plaintiff; but if they thought that such authority was not incidental to mine management, they would find for the defendant. Or, if they thought the conduct of Robinson, although not incidental to mine management had been adopted by the defendants, they would give a verdict for the plaintiffs; but if they believed there was no express, no incidental authority, and no adoption on the part of the defendants, they would return their verdict accordingly.—Verdict for the defendants.

LITERARY NOTICES.

Handel's Sacred Oratoria, the "Messiah," in vocal score, with Accompaniment for Piano-forte or Organ: arranged by VINCENT NOVELLO. London: J. A. Novello, Soho.—August Number.

Although sacred, or other music, is rather out of the usual routine of subjects for notice in our columns, we cannot lose the opportunity of calling attention to the above publication—the first attempt, we believe, to place an elegant and perfect copy of this (almost) divine production within the reach of all classes of the community. It may, indeed, be considered a national work—for great as has been the advancement of the knowledge of music among the middle, and even labouring, classes of the people within the last 20 years, it is only by the circulation of such cheap, portable, and correct editions of the inspirations of the great composers—as the present one—that the higher attainments of the science can be instilled into the minds of pupils, forming the largest portion of society. The "Messiah," when complete (in 12 numbers, of 16 pages each), will cost about the price of two fashionable songs, and will thus place an excellent edition in the hands of every one who may require it—either to play or sing from, or for an auditor at a performance of this immortal work, to follow the musical progress by the eye as well as the ear. The quality and the elegance of the style in which the work is finished, are undeniably of first-rate character; and, when complete, will form a volume which will be an ornament to any musical library in the kingdom.

Railway Register for August.

We have received the Number of this periodical for the present month, which commences with a very good paper on the Central Railway Termini, proposed to have been erected in various parts of London, Fore-street, Farringdon-street, &c., and enters into a very just criticism on that precious piece of Board of Trade legislation, the "Report of the Railway Termini Committee:" it is very justly shown to be in direct opposition to the wants and wishes of the public; and, although such report has, for the present, paralysed the schemes, the time will arrive when the *vox populi* will insist on a central railway terminus. This is followed by a continuation of the Editor's Contributions on Railway Statistics, comprising iron and ironstone, copper, lime and limestone, building and paving stone, sand, mineral, brick, timber, fish, provision, grain, manure, mail and goods traffic generally—a paper on Preventions of Accidents in Mines—Burnier's Barometrical System. We cannot help thinking the huge report and map of the Great Luxembourg Railway would be more in place in the Portfolio—it swells the first pages of the volume without adding to the interest.

A deputation from the London Sewage Chemical Manure Company, consisting of Messrs. John Goodwin, Job Heath, W. Higgs, John Swinstead, John R. L. Walmisley (the solicitor), and E. Hunt (the secretary) had an interview with Viscount Morpeth yesterday, at the office of the Woods and Forests, in Whitehall-place.

ROYAL POLYTECHNIC INSTITUTION.—During the week this establishment has been crowded daily, in consequence of the attractive lectures delivered by Drs. Ryan and Bachhoffner—the former gentleman having chosen as his theme, "the Philosophy of Steam as a Motive Power;" and the latter *savant*, "The History and Varieties of Electric Telegraphs." We need not say much on the propriety and fitness of such subjects in these steam times; but we cannot avoid the reiteration of our opinion, of the valuable services this institution and its talented professors are continually rendering to science, in thus bringing so forcibly, and yet so simply, before the world all that is new and really useful. Nor are the attractions of popular science confined merely to the lecture rooms of the professors—every portion of the institution is filled with novel applications of industry and mechanical genius, to the furtherance of human comfort and happiness. We must also say a word or two in favour of the music department, so ably conducted by Dr. Wallis—the visitors have an opportunity of hearing all the popular airs delightfully arranged by him.

A BEDRIDDEN PERSON—WONDERFUL EFFECTS OF HOLLOWAY'S OINTMENT AND PILLS.—Robert Stephens, of Barking Side, near the Red House, hurt his thigh 19 years ago, which affected his knee so seriously, as to oblige him to relinquish his trade as a shoemaker, and go to the London Hospital for seven weeks—the surgeon wishing to amputate his leg, he left, and for 11 years endured the greatest suffering—two of which he was completely helpless and bedridden; but now, by using Holloway's ointment and pills, in five weeks, he is able to dress himself and walk by the aid of crutches, with every probability of a certain cure.—These medicines are sold by all druggists; and at Professor Holloway's establishment, 244, Strand, London.

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Original Correspondence.

THE SUPERIORITY OF COMPRESSED AIR AS A MOTIVE POWER.

SIR,—Amongst the various systems that have been proposed for the simultaneous rarefaction of the air in the atmospheric tube, there does not appear to be one that is capable of answering the purpose, except with an enormous loss of power. Until this obstacle to the vacuum system of atmospheric railway traction has been overcome, the progress of that system must of a necessity be slow. In order that this system may have a chance of successfully competing with the locomotive system, a better method of husbanding the power of the stationary engine is indispensable. What is required by this system, is some apparatus by which the power of the engine may be stored up in such a manner, that it may at any time be instantaneously applied, without loss or depreciation, and only in such proportion as the circumstances of the case shall require; and, although I have not the slightest doubt but that compressed air, or a combination of compressed and rarefied air will ultimately prevail, yet as railways to be worked on the vacuum system only are already in existence, and as their success will lead to the adoption, or at least to a trial, of what I consider a far superior system, it would be inconsistent with my object, if I did not contribute a trifle towards the solution of this apparently difficult, though really simple, problem. The desire to economise the expense of working this system of railway traction, no doubt, first led to the idea of adopting some plan by which the stationary engine might be kept constantly at work; storing its power in such available manner, that it might, when required, be instantaneously used. Water tanks and vacuum magazines were the first things that presented themselves to the mind: either of these are better than letting the engine stand idle during the intervals that occur between the running of the trains, but neither of them (as at present applied) answer well the purposes intended; the former is susceptible of such modification as will entitle it to the claim of legitimacy; but the latter, although it has some plausible pretensions to legitimacy, will not be able, with all its professional support, to maintain its claim. Vacuum magazines lavish away at the commencement the power committed to them; and unless they are of immense size, their strength will be exhausted ere their work is performed: the greater the degree of rarefaction in the magazines, the greater will the loss of power be. The plan proposed by Mr. Nasmyth, of producing vacuum by wholesale, would have answered very well, if that gentleman could have discovered how the operation might have been performed in the tube itself—otherwise, it has the same objections as the other system of rarefying. The "barometrical apparatus," although not of that class of things, termed by "An Engineer," "mechanical illusions;" yet it has considerably too much complicated mechanism about it for it to possess the advantages claimed for it by its inventor. With these few observations, I shall now, without further preliminaries, proceed with a description of my plan of storing the power of the engine for the simultaneous exhaustion of the air from the atmospheric railway tube. As the system which I am about to describe is very simple, I hope to be able to give my readers a correct idea of it, by the aid of a few simple illustrations, without the assistance of an engraving. What I propose, then, is to rarefy the air in the propelling tube, by water being let from a number of waterproof iron vessels, supported by other waterproof iron vessels, standing in a reservoir of water, at such height, or heights, as would give to each vessel a power proportionate with the work it was destined to perform: those vessels intended for preliminary exhaustion to be made to increase the fall of the water, just in the same proportion as the rarefaction of the air increased; and those vessels intended to produce traction, to maintain a uniform height for the water to fall, or otherwise, if desired. To accomplish this, may at first appear to some a difficult task, but we shall presently see that it is not so very difficult. Suppose a light waterproof iron box, or vessel, of a rectangular shape, say 6 ft. long, 4 ft. broad, and 2 ft. deep (this shape is chosen merely for the purpose of illustrating the principle), one of the largest sides of this vessel we will term the "bottom," one of the next largest shall be "the side," and one of the smallest shall be "the end;" and when either of these is supposed to downwards, the opposite side shall be "the top" (and the same with another vessel we shall presently have to speak of); we will suppose this vessel to be empty, in the ordinary acceptation of the term—we will, therefore, call it an "empty vessel;" suppose, then, this empty vessel to be placed in a small reservoir of water, first say on its bottom, and let a mark be made, showing the depth it sunk in the water; next turn it on its side, and mark it as before; and, lastly, turn it on its end, and also mark it when in this position.

Now, let the depth the vessel sunk in the water, in each of the three positions, be taken, and compared one with another, and it will be found that it sinks in either position exactly the same proportion of its height (considering the height to be from top to bottom the way it laid each time); if when the vessel is on its bottom it sinks ½ of its height, when it is on its side, or end, it will likewise sink ½ of its height, and the height being respectively 2 feet, 4 feet, and 6 feet, and assuming that ½ is the depth that it would sink, we shall have 1 ft. 9 in., 3 ft. 6 in., and 5 ft. 3 in., as the respective heights it would be out of water. We will now suppose that we have another iron waterproof vessel, 6 ft. long, 4 ft. broad, and 1 ft. 6 in. deep—of exactly the same weight as the former one; three similar sides of this vessel to be called by the same names as the three corresponding sides of the first: it must be provided with a cock at one angle of the bottom, end, and side, so that when the vessel was either on its side, bottom, or end, the water which it is to contain would all run out; it must, likewise, have vent holes in each of the three sides intended to be alternately the top. We will now suppose the former to be put into the water again on its bottom, and the latter vessel placed on it also on its bottom; and, being of the same weight, it will cause the former one to sink just twice as far in the water as it did before, which is ½ or 6 in., leaving 1 ft. 6 in. out of water, the same as the height of the upper vessel. Now, if the upper vessel was turned on its edge or end, it could not sink the empty vessel any lower, nor could the empty vessel, if turned on its edge or end, be sunk by the joint weights of both vessels above ¼ of its height. We will now suppose the empty vessel to be placed in the water on its bottom; and the other vessel (which we will henceforth call the "water vessel") filled with water, and placed on it also on its bottom: of course, the cock must be shut, and at least two of the vent holes stopped—the one at the top may be open; the water vessel, being full of water, will sink the empty one just to the surface of the water in the reservoir. Now, if the cock is opened to let the water from the vessel, it will have a uniform fall of exactly 1 ft. 6 in. from the beginning to the end of the operation; for just as fast as the water sinks in the vessel, so will the vessel, from the reduction in the weight, rise. Already, it will be perceived by some, how a uniform tractive force may be maintained; but, as I wish to be perfectly clear, I shall give some more illustrations—Suppose the empty vessel to be turned on its edge, the water vessel filled, the cock shut, and vent holes attended to, &c., and placed on the empty vessel on its bottom, as in the former case—the empty vessel will also in this instance sink, until its top is even with the surface of the water in the reservoir; and, consequently, when the cock is turned, the water will at first have a fall of 1 ft. 6 in., which will gradually increase, until at the end of the operation it will have a fall of 3 ft., which is the height the empty vessel would rise above the surface of the water in the reservoir, when the other vessel was empty. Now, if the water vessel, instead of being 6 ft. by 4 ft. by 1 ft. 6 in., it was 6 ft. long by 3 ft. broad and 2 ft. deep, it would be of the same capacity as before; but if the empty vessel be standing on its edge, and the water vessel placed on it also on its edge, a uniform fall of the water of 3 ft. will be obtained. Again: suppose the empty vessel to be turned on its end, the water vessel filled and placed on it on its bottom, the height the water would have to fall would at first be 1 ft. 6 in., but at the end of the operation it would be 4 ft. 6 in.

One more illustration, and I will have done—Suppose the empty vessel to be placed again on its bottom, the water vessel placed on it on its side or end, we should have a diminishing fall of from 4 ft. or 6 ft. to 1 ft. 6 in. Thus, we perceive that there is no difficulty in obtaining by this system an increasing, uniform, or diminishing power, as may be required, and without mechanical apparatus of any kind whatever. I will now explain the mode of applying the principle in practice. I do not know whether the views which Mr. Burnier seems to have, of rarefying the whole of the air taken from the tube equally, is one that is generally entertained by practical engineers, or not; but it does not seem to me to be necessary, or desirable, to do so—indeed, it seems to me to be the height of folly and inconsistency, to continue to rarefy the air that is first taken out of the tube, until it is expanded to one-half, two-thirds, or three-fourths, of its former bulk. By such means, the "greatest possible economy" could by no means be obtained; for, independently of the apparatus requiring to be nearly, or quite, double the size, and, consequently, double the expense, double the quantity of water would have to be raised, and double the number of strokes of the engine; and, if less power was requisite at each stroke, the friction of every extra stroke would be so much loss of power. I, therefore, consider it better, for these reasons, to have several small apparatus, than to have one large one. Let us suppose, that it is intended to work a line of railway by the vacuum principle alone, and that the size of the tube is equal to 12 in. square (distance between stations 6 miles), to be worked at 4-5ths of a vacuum, or about 24 in., and that there is to be four preliminary exhausting apparatus, and one to produce traction—the whole of the apparatus to contain, after the operation is performed, 1-5th each of the quantity of air in its original bulk contained in the tube—what will be the size of each vessel? If we take 3-15ths from the tube, the other 12-15ths will fill the tube—consequently, each 3-15th occupies ¼th of its space; and, as the 3-15ths first taken out will be expanded in the same proportion as the 12-15ths remaining, it follows that the first apparatus must be ¼th the capacity of the tube, or about 19 ft. square. Now if we take from the remaining 12-15ths other 3-15ths, each three of the nine remaining will occupy one-third of its space—and the portion taken out, being equally expanded, it will require a space equal to one-third of the tube, or about 22 ft. square; the next 3-15ths will require a space equal to one-half the tube, or rather more than 25 ft. square; the last two apparatus will each have to be of the same capacity as the tube, or not quite 32 ft. square; the capacity of the five vessels will be equal to 3 1-12ths of the capacity of the tube, whereas, if the whole of the air was equally rarefied, five times the capacity of the tube would be requisite for the purpose, which is nearly 2-5ths, or 40 per cent., more space than required by the arrangement which I propose. The next thing will be to consider the size and shape of the carrying, or "empty" vessels: those to contain, first, the water, and afterwards the rarified air, I have, for the purpose of easier calculation, supposed to be square; and shall, for the same reason, suppose these to be square also, or rather rectangular. I shall, merely for the purpose of elucidating my plan, suppose (and without any regard to the correctness of the supposition) that each of the water vessels would, with its own weight, when empty, sink just 1 ft. in the water of the reservoir, and that the empty, or supporting, vessels will be the same weight; and as each of the preliminary exhausting apparatus will increase the rarefaction 3 lbs., the fall of the water must increase 7 ft.: the vessel to support the first water vessel would, therefore, have to contain in 26 ft. of height the same space as that vessel, which is 19 ft. square. If the cube of 19 is divided by 26, the square of the remainder (omitting fractions) is 16—26 ft. high by 16 ft. square is the size of this part of the empty vessel. We must increase its height by a space equal to the square of 19 by 2, equal to 722; this number divided by 16, the square of the remainder, is (omitting fractions) 6 ft. 9 in.; this sum, added to 26 ft., is equal to 32 ft. 9 in., which is the full height of the lower vessel—supposing the one it has to support is 19 ft. square, and that the fall of the water is to increase 7 ft.

The next thing is, how are these vessels to be disposed? It is quite clear that the water vessel of the first preliminary exhausting apparatus cannot be placed *over* the empty vessel—for if it was, the fall at the commencement would be 19 ft. It must, therefore, be placed in some other position; it appears to me that it would be best to make two empty or supporting vessels, each one the same height as if only one was to be had, but only half the size, and the water vessel placed between them, and supported by a beam running across the top of the three vessels; the centre one should be raised a little above the other two, which should stand in the reservoir of water, and be separated from the centre one by a waterproof wall surrounding it; provision must also be made to keep the apparatus in a perpendicular position; the air from the tube will enter the vessel at the top, and the water will be discharged at the bottom into the reservoir, and will be pumped up into the vessel again by the steam-engine. I need not enter into particulars about these minor matters, as scientific men will understand how all that is to be done; if the principle is correct, experience will correct the details by which it is to be applied to practice. Having explained how the height and size of one of the supporting vessels is found, it is necessary to calculate the height or size of either of the others, as one example will serve for all; but if I have not been sufficiently explicit to convey a correct idea of the system, I shall be happy at any time to give further information on the subject.

August 10. JOHN WESTON.

ATMOSPHERIC RAILWAYS—THE BAROMETRICAL SYSTEM.

SIR,—In your Number of the 18th July, one of your correspondents, that we termed "M. X.," from his quality of *unknown*, proposed, after several remarks on the *Barometrical System*, a method of working atmospheric railway, that we considered as the only *legitimate one*.

We made the calculations of this method for our own satisfaction, and submitted it to its author. "No answer has been given on the subject; but only, in your last Number, a writer, stranger to the question, Mr. John Weston, endeavoured to prove, not the possibility of the scheme—he acknowledges it to be impossible, as we did prove—but our being "very little scrupulous in departing from truth."

The intrusion of Mr. Weston has thus produced no result for the question itself—and his arguments to prove what he advances ought to be strictly, perfectly right; because, on the contrary, as his object is a personality, he could not find any excuse in the scientific purpose of his digression.

The result of our calculations on the system proposed is a loss of 678 per 1000, arising from the very nature of the system. To arrive at it, we had to establish the amount of power necessary to work a tube, the capacity of which is taken as 1: to compare this amount with that usefully employed.

The amount of power, necessary to work a line of atmospheric railway, is the produce of two quantities—first, the volume to be opened; second, the pressure on every square inch.

In the case proposed, various volumes could be employed; but as the pressure increases when the volume is lessened, and reciprocally, any change in these quantities produces the same amount, or very nearly, and we took, as bases of our calculation, the numbers 15 and 20—supposing all the reservoirs exhausted to and from the same degree. In order to avoid any misunderstanding of the question, we observed, before beginning, that *corresponding numbers would give similar results.*

It was unnecessary to fill the columns of the *Mining Journal* with algebraic figures, and we suppose that any mathematician would, for verifying our calculations, take the same data. Mr. Weston, being an exception to this rule, we beg to submit to him the following equations.

The air in the tube, being represented by 30, that in the reservoirs at 20 inch by 10, the air after the operation by 15, and x being the number of reservoirs, $x+1$, the space of the reservoirs, and that of the tube, we can say—

$$\frac{30 \times 10\,x}{x+1} = 15$$

We successively change the expression and form of this equation to extract the value of x, and it becomes—

$$x+1 = \frac{30 \times 10\,x}{15}$$

$$x = \frac{30 \times 10\,x}{15} - 1$$

$$x - \frac{10x}{15} = \frac{30}{15} - 1$$

$$x - \tfrac{2}{3}x = \frac{30}{15} - 1$$

$$\tfrac{1}{3}x = 2 - 1$$

$$x = 1 \times 3 = 3\text{: number given.}$$

The second equation is this:—

$$\frac{15 + 10\,x}{x} = 15$$

$$x = \frac{15 + 10\,x}{15}$$

$$x - \frac{10\,x}{15} = \frac{15}{15}$$

$$x - \tfrac{2}{3}x = 1$$

$$x = 1 \times 3 = 3\text{: number given.}$$

We calculated from these numbers the power necessary for one operation; and these calculations being mere arithmetical figures, we inserted them in the *Mining Journal*, and concluded to a loss of 678 per 1000.

Now, what are Mr. Weston's objections to these results?—to the manner by which they are obtained? What has Mr. Weston found out? What calculations does he oppose to our results?

Mr. Weston has found out that exhaustion could be created by other volumes than those given by us—that in traction the power is at first greater than necessary; he has proposed to exhaust the tube with two reservoirs; to produce traction with an *average* volume that he *prudently* abstains from *naming*; and here Mr. Weston has stopped. Exactly, as if we ever pretended that, under any circumstances, but those we named, the volume of the reservoirs was to be three times that of the tube. Mr. Weston has taken little care of having his reservoirs at the same degree as we did—of proving that this difference of volume was not compensated by an increase of power, and after having solved *in his manner* about the tenth part of a problem—all the operations of which are independent of each other—he finds himself empowered to declare wrong our calculations of the whole problem.

Should Mr. Weston have proceeded a little farther in his mathematical inquiry of our errors, he would have found out, that the surplus of power in the beginning of *traction* cannot be made useful for the end of this operation—that with less than three reservoirs the rarefaction will be below the degree required before the train has arrived—and should Mr. Weston have considered after, what amount of power is necessary to raise four reservoirs from 15 to 20 inches, and one from 10 to 20 inches, he would have obtained, within a few hundreds, the same result as we gave.

In ordinary circumstances, we should not have blamed Mr. Weston r his deficiencies in his manner of solving a mathematical problem; but when rough personalities are based upon such absence of elementary rules of calculation, when the character of others is condemned by Mr. Weston upon such proofs, we cannot help recalling him altogether to the rules of *common civility*, and to those of *common sense*.

We do not know Mr. Weston; we had never anything common with him, and we cannot understand what reason has induced him to take part in a cause, when he has no means at all of supporting it. Mr. Weston can, in 1845, have published elaborate details on the losses of air-pumps; he can have forgot in his details to add 50 per cent. of loss by the employment of a single-acting air-pump; he can, in 1846, present projects of a system, for working railways and everything, the basis of which is the employing of air-pumps. Mr. Weston may have forgotten, that losses exist as well in compressing as in exhausting air-pumps. All these are matters of his own; and the little sample of his spirit of discussion is far from engaging us to take any consideration of the subject; but we shall inform Mr. Weston that any calculations we have published, or any we shall publish, is not committed to the press without being first tried by a serious consideration, according to the rules of good sense, and a very minute investigation, according to the rules of mathematics (for which science we still do not entertain any very high pretensions). We can thus present them with a certain confidence, and should any mistake be introduced in them, we are always ready to acknowledge it, when the demonstration is made with this *good form* which always accompanies the *good right*.

The press is a noble field, where men are fighting for principles, for ideas; this field admits none but *well-bred* champions—no other weapons but *armes courtoises*—the general *motto* is self, mutual respect: without this principle, the press would be no more than a pit of mercenary gladiators.

These feelings we are happy to acknowledge, then, in a letter from Mr. C. H. Greenhow, and answered in the same manner, and in which that gentleman expresses himself strongly attached to the principles of a fair and respectable discussion.

As regards the author of the legitimate system, for the *few plain calculations* of which we were waiting on Saturday last, we beg to inform him, that upon our having found his first proposition wrong, and being supported in this estimation by the authority of Mr. John Weston, that nobody will suspect us from having obtained by unfair means—we shall not answer any other objection from the same source, unless we are favoured with the name of the correspondent.

We are always ready to give explanations to any gentleman taking any interest in the question; but when objections are made by unknown persons, when nobody is to take the responsibility of them, we shall detain our answers as soon as any of the propositions will have been found evidently wrong. We shall then solve the equation according to our data, and make x = zero.—N. A. BURNIER: *Dufour's-place, August* 11.

BURNIER'S BAROMETRICAL SYSTEM.

SIR,—I much regret that I was again prevented last week from sending you a communication on this subject; and though I take up my pen now for the purpose, I am so very much occupied in business, that I have not time to go deeply into the question, nor, indeed, do I think it needs it. A few simple arithmetical calculations will show the proportion of cylinder required for any certain distance of tube between stations; and it is then, of course, easy to estimate the power required for any given operation. I am sorry that I must again demur to the ambiguity of Mr. Burnier's style of description, which I cannot exactly comprehend—nor are his calculations by any means clear. In one of his letters I think he speaks of his 40-ft. cylinder being sufficient for six miles of tube; and in his postcript in the Journal of the 25th ult., he takes me over Blackfriars-bridge to see the apparatus on the premises of the gas-works (one of the gas receivers I expect he alludes to)—and states that the exhaustion would do for 25 miles of tube, without specifying diameter, area, solid contents, or any other contingency. If, however, Mr. B. considers the practical working of his pair of double cylinders (40 feet in height), as easy as a gas holder, I fear he will find himself wofully deceived—the latter is purely a *barometrical* operation, raising an immense iron cylinder, in opposition to its weight; and the atmospheric pressure, by the elasticity and expansion of the gas admitted, and by the descending weight, forcing the elastic fluid into the service pipe when the valve for that purpose is open; but to the question. I will commence with a six mile length of tube between stations (certainly less than that would never be tolerated on long lines), of 12 in. internal diameter—this will contain 31,680 ft. of space; and as the area of a circle whose diameter is 1 is ·7854, the contents of this six miles of tube is 24824·92—say, 24,825 cubic feet. Now, the area of a cylinder, 28 ft. in diameter, is 615·7536, which multiplied by 40, the number of feet proposed for the height, gives 24630·144 for the solid contents of a cylinder 40 ft. high, and 28 ft. in diameter, or the vacuum required to approximate to the six miles of a 12 in. tube.

The contents of the imperial gallon being 277·274 inches, such a vessel would contain 12,000 gallons of water, or about 100,000 lbs. weight, without the cylinder itself, and the pressure of the atmosphere on the surface, at 15 lbs. per inch—1,320,027 lbs.—gives an aggregate of 600 tons to be raised 40 ft., besides friction every time the trains start; and then, be it remembered, on opening the valve connecting the tube with the reservoir, you only obtain half a vacuum, or a working pressure of about 6½ to 7 lbs. per inch. Now, though we must all of course be aware that, in exhausting six miles of tube, the aggregate power employed will amount to the same, whatever means are taken to effect it; yet in working by air-pumps, the resistance is spread over the whole operation—while, in the case under discussion, there is a continuons drag upon the machinery—not a mere pretty mathematical calculation of how many times 33,000 lbs. raised 1 ft. high in one minute, will be required to effect the object, but a solid, *bonâ fide* mass of matter, possessing a gravity of upwards of 600 tons weight, to be raised for every operation to the actual height of 40 ft., and continually suspended, like the sword of Damocles, over the head of the unfortunate engineering conception. I am not, sir, one of those who put too much faith in algebraic calculations as to arriving at practical results—they are, doubtless, of vast utility in all the abstract sciences; and without such a system we could not have arrived at many of the sublime truths we are in possession of; but, with regard to the mechanical powers, as applied to pneumatics, hydrostatics, dynamics, &c., they too often lead to the most delusive conclusions, and are productive of gross errors, particularly in the hands of parties who have not sufficiently studied their powers and properties. In Mr. Burnier's communication, above alluded to, he asks himself the questions: "Taking the capacity of the propelling tube to be equal to the size of the reservoir, what will be number of reservoirs necessary to exhaust it?—*Ans.*, three. What number of reservoirs will be necessary to withdraw the air from the tube, and produce traction?—*Ans.*, three. Total number for one operation, six."—This is, I suppose, a *summary* mode of calculation. I am not aware how he arrives at the conclusion. I have not noticed the power reserved of half vacuum, &c., after the operation, as there will be leakage under the best of circumstances, and this would about balance it, as I allow in the first instance a perfect vacuum. That we can command machinery to raise such weights, I am well aware from extensive experience; but then it is under very different circumstances: a railway requires certainty, speed, and safety, in all its details; and I now leave it to your scientific and other readers (to whom the above simple figures must render it perfectly familiar), whether it is possible, with the risk of accidents from the complicated machinery required, such desiderata can be secured by the Barometrical system. M. X.

Blackfriars-road, August 12.

GREENHOW'S GEOMETRICAL RAILWAY.

We are glad to observe, that the discussion of the merits of the principles on which Mr. Greenhow founds the basis for the construction of his railway, is causing increased interest, and bringing new disputants into the arena, which must greatly tend to the development of the truth, and to those results which, in the construction of railways, will secure the safety of the travelling public, and increased economy, and, consequently, profit, to the proprietary of these national constructions. A pamphet has just appeared, published by Pelham Richardson, Cornhill—entitled *Round Rail v. T Rail; or the Principles of the Geometrical Railway System Examined*—by "Geometricus," and dedicated to the civil engineers of Great Britain. The author goes back to the first principles of railways, by carefully considering what a railway really is, and which he describes as a great machine, consisting of many parts—some fixed, others moveable—constructed for the purposes of locomotion, and involving a powerful tractive force and the reduction of the causes of resistance, within the smallest possible limits. These causes of resistance he arranges under four heads—1. The weight of the mass to be put in motion.—2. The resistance of the atmosphere.—3. The irregularities of the surface over which the motion is to take place.—4. The friction necessarily attendant on the movement of one body over another. He then proceeds to show, that the resistance has not yet been reduced to the smallest possible limits; to remove inequalities of surface to the greatest practical extent, the rails ought to describe parallel lines, mathematically equidistant throughout, without waves either lateral or vertical, free from projections at the joinings, and offering in all directions a perfectly regular and uniform surface.

In advocating the round rail, he assumes—1. That machines can only act perfectly when the several parts are well fitted together.—2. *Round* is the only form which presents an uniform surface in all directions; and 3, when motion in more than *one* direction takes place between the different parts of a machine, derangement in the connection of such parts must necessarily ensue, unless one or both of them be of a round figure; because round is the only form which presents an uniform surface in all directions. From these premises, he concludes that defects of a positive character exist in the construction of existing railways.—1. That the parts are not well fitted together.—2. The T rail is of a figure which will permit the wheel to move on it in *one* (a horizontal) direction only, without having the mechanical connection destroyed; and 3, a second movement of the wheel upon the rail *as on an axis* is constantly occasioned in a greater or less degree, from causes already enumerated, which movement can take place with safety on a round rail only, because *round* is the only figure which presents an uniform surface in all directions—and in this second movement the rail becomes a true axis on which the whole train makes a partial turn; and concludes that, in the round rail, the action and reaction of the several parts are regular, definite, and precise. The symmetry and precision of the arrangements satisfy the reason of the mathematician, and the workman-like fitting of the whole is congenial to the habits of the practical mechanic.

The author next considers the inclined spokes at an angle of 22½°—"The inclination of the spokes at an angle of 22½° from the hollow tire of the wheel towards the axis, acts in three ways.—1. When, from the causes already enumerated, the second movement of the wheel upon the rail is produced, up to the angle of inclination, the wheel makes pressure within the vertex of the rail; the upright spokes, on the contrary, under like circumstances, passing beyond the vertex, would be pressed outwards by the whole weight of the carriages resting upon them.—2. It is demonstrable that the practical effect of the inclination of the spokes is to place the centre of gravity at a greater distance from either wheel respectively, when causes are in operation to occasion the second movement, of which the rail is the centre or axis.—3. The inclined spoke being of greater length than the straight one, becomes a lever, with the rail for its fulcrum; which resists with the whole superincumbent weight of the carriage, any causes tending to destroy, in either direction, its equilibrium." After some other observations, explanatory of Mr. Greenhow's system, the author observes—"One other valuable and important feature in the Geometrical system remains to be noticed—the method in which one pair of the wheels of the engine and of each carriage can be made to turn in such manner, as to adapt itself to very sharp curves with perfect ease and safety. The axle of the wheels plays in bearings, which are permitted to move within certain limits, but always perpendicular to the frame-work which supports the carriage, and are guided by a strong circular rod passing through certain openings, which at once permit and limit the movements of the wheels within the necessary range. Though in description it is not easy to convey a clear notion of this arrangement of the wheels, it is in reality so simple that the slightest inspection must make it perfectly understood; and in practice it must not only give safety to curves, otherwise impassable without danger, but will greatly facilitate and eco-

reduce the passage from one line to another, when they meet at an acute angle; and may be the means of saving altogether the cost of the expensive turn-tables now used in the stations for passing the trains round from one side to the other. Several other questions of economy might be entered into in connection with the Geometrical system, especially as regards the substitution of cast for malleable iron in the construction of the rails. Their cylindrical form would, undoubtedly, add greatly to their strength; and the absence of irregular projections or angles would protect them from the sudden jarrings to which rails of the T form are exposed." The pamphlet is one of great importance to Mr. Greenhow, as fully corroborating the correctness of his principle; and, as we have devoted some considerable space to a development of his views, we shall return to the subject when we have more space at command, and notice the further points treated on by "Geometricus."

Mining Correspondence.

ENGLISH MINES.

BARRISTOWN.—The lode in the 24 fm. level end, west of the engine-shaft, is producing rather less than half a ton per fathom; it is large and regular, but the ground is hard. In the 18 fm. level end, west of flat-rod shaft, the lode is producing rather less than 2 tons per fm.; at the end west of Nangle's shaft, the lode is producing 2 tons per fm.; and the end east of the same level is producing about 1 ton per fm. The lode in the adit end east is without alteration. At Clon Mines we have intersected nothing to report upon.—T. Angove: August 15.

BEDFORD UNITED.—At Wheal Marquis, there has been no lode taken down in the 80 fm. level since last reported. In the 70 fm. level east the lode is 2 ft. wide, and worth about 8*l.* per fm; the lode in the stopes, in the bottom of this level, is worth 18*l.* per fm. The lode in the 58 fm. level east is 18 in. wide, composed of capel, spar, and mundic. At Ding-Dong, the lode in the 24 fm. level west is 3 ft. wide, producing a little tin. At Wheal Tavistock, the lode in Phillips's engine-shaft is 2 ft. wide, composed of spar, mundic, and ore; the lode in the 47 fm. levels east and west, is without alteration. In the 35 fm. level east there is at present a cross-course (the most westerly in Wheal Marquis), to the east of which the lode has not yet been cut; there is no alteration in the south engine-shaft for the past week. The lode in the adit level is 2 ft. wide, composed of spar and mundic, with spots of copper ore in places.—James Phillips: August 18.

CALLINGTON.—In the 112 fm. level, driving north, the lode has not been taken down; in the south end we are opening tribute ground, the lode has an improved appearance. In the 100 fm. level, both north and south, we are driving through ground that will set at 8s. in the 1*l.* The lode in the rise, in the back of the 90 fm. level north, and in the winze, sinking below the 80 fm. level, is 1 ft. big, intermixed with silver-lead ores. In the 80 fm. level we are opening tribute ground. At the north mine, in the 90 fm. level, driving south, we are opening ground that will set at a moderate tribute; in the north end the lode has not been taken down. In the 80 fm. level, both north and south, we are opening tribute ground. The small engine, with the crusher and stamp heads attached, works very well.—J. T. Phillips: August 17.

CONSOLIDATED TRETOIL.—There has been no lode taken down in Henwood's shaft since last reported. The lode in the 70 fm. level, west of Henwood's shaft, is 1 ft. wide, producing a small quantity of ore; in the 70 fm. level, east of Henwood's shaft, the lode is 15 in. wide, a good orey lode, improved since last reported. In the 60 fm. level, west of Williams's shaft, the lode is 15 in. wide, producing some stones of ore; in the 60 fm. level, east of Henwood's shaft, the lode is 9 in. wide, at present unproductive. In the 50 fm. level, east of Henwood's shaft, the lode is 18 in. wide, producing good stones of ore, and opening ground that will set on tribute; the lode in the 50 fm. level, east of John's engine-shaft, is 1 ft. wide, producing good stones of ore. We sampled yesterday 61 tons of ore.—Henry Williams.

CUBERT SILVER-LEAD.—The engine-shaft is sunk about 5 fms. below the 25 fm. level, ground still rather hard; the lode, going east and west, at the 25 fm. level, is improved—in the former there is a leader up from the bottom of the end about 6 in. wide, very rich; in the latter there is a great deal of mundic, with a little lead. In the 15 fm. level east there is still a large gossan, but poor for ore; the west end is very promising, and worth a ton of lead per fm. We expect to hole the new shaft in the moor the latter part of next week. There is nothing new to report respecting the tribute pitches. Yesterday we sampled a parcel of rich looking lead ore, computed 30 tons.—R. Rowe.

EAST TAMAR CONSOLS.—At Whitson, in the 46 fm. level, south of Hitchins's shaft, the lode is 15 in. wide—saving work. In the 46 north the lode is 1 ft. wide—good work. In the 36 north the lode is disordered by a slide. At Furzehill, Harrison's shaft is sunk below the 30 fm. level 4 fms. 3 ft.; lode 2 ft. wide, producing good stones of silver-lead ores. In the 30 fm. level driving south the lode is 3 ft. wide—good work. The new ground we are opening is looking very promising.—B. Robins: August 17.

GREAT WHEAL MARTHA.—The main part of the lode, at the 60 fm. level east, continues large and regular, but the south part approaching it is at present small; should the junction not effect a favourable change in the lode, we would propose to suspend operations in this mine. At the new mine, the stopes in the back of the 10 fm. level having become poor, the level was partially cleared and the air improved, so that we have resumed driving the end west, and have this week intersected a cross-course, which is about 1 ft. wide, consisting of friable quartz, fragments of slate, and spots of mundic. The lode close at this cross-course had a very promising appearance, and contained stones of yellow copper ore, of good quality; it (the lode) is, however, hove, and we have not yet discovered the western part of it. The tributers have raised some tolerably good work since our last report, but they have now reached a layer, consisting almost wholly of quartz and mundic, and the pitch is, consequently, poor at present. The new engine-shaft is sunk 16 fms. 3 ft. below the adit level, and the ground continues very good. In making a reservoir for the engine, we discovered Old Wheal Martha lode, and have this week opened a little on it, but did not find any thing to warrant a further prosecution.—J. Prince; J. Penaluna: August 15.

GUNNIS LAKE.—I beg to inform you, that Bailey's engine-shaft is now 11 fms. 2 ft. under the adit level; the lode is 2½ ft. wide, composed of gossan, spar, prian, &c.—altogether a very kindly lode.—W. Richards: August 18.

HAWKMOOR.—I am glad to be able to inform you, that there is an improvement in the 15 fm. level, east of Hitchins's shaft, the lode being about 2 ft. wide, 12 inches of which is saving work, and promising improvement.—P. Richards: August 18.

HANSON.—In reporting this week, I beg to say, in the engine-shaft, sinking under the 22 fm. level, the ground is good, now sinking for 10*l.* per fm.; the lode is 2½ ft. wide, a very kindly lode, with good stones of ore. In the 22 fm. level, east of engine-shaft, on Stainsby's lode, the lode is 2½ ft. wide, a good lode. Since my last report the lode has again opened, and have had a good orey lode; it has produced stones of almost solid ore, as much as 1½ cwt. in a stone. The water is drawn off the bottoms on caunting the lode at the 12 fm. level, and have set a winze to sink from this bottom to the 22 fm. level (four men), at 8s. in the 1*l.* In the other pitch on caunting lode, at the 12 fm. level, the lode is nearly 3 ft. wide, with some ore, but not rich.—Z. Williams.

HOLMBUSH.—Hitchins's shaft is sunk about 9 ft. below the 120 fm. level, the ground in which is still hard; we have got through the great cross-course at the 120 fm. level, west of Hitchins's shaft, and have set the level to drive south, at 8*l.* 10s. per fm.; we have resumed driving the 120 fm. level, east of Hitchins's shaft, by four men, at 10*l.* 10s. per fm. In the 110 fm. level north, on the lead lode, we have intersected several small branches of spar, mundic, and spots of ore, within a compass of 6 ft., which, agreeable to the underlie of the lode in the 100. is the north lode, on which we have set to drive a level west; in the same level, driving south, the lead lode is 4½ ft. wide, composed of spar, prian, and stones of lead; we have driven about 8 ft. south (from the north part), at the 100 fm. level, and have intersected several small branches of spar, mundic, and spots of ore; we purpose driving a little further in this direction, seeing there is water issuing from the end; in the winze sinking below this level the lode is 1 ft. wide, and worth 10*l.* per fm. In the 100 fm. level south the lead lode is 4 ft. wide, composed of spar, prian, and stones of lead; in the same level driving north, the lead lode is 3 ft. wide, composed principally of flookan, with stones of lead. In the 90 fm. level, west of Hitchins's shaft (on the north part), the lode is 10 in. wide, composed of spar, mundic, and stones of ore; in the same level driving south, the lead lode is 3 ft. wide, composed of flookan, spar, and spots of lead. Bray's rise, and the 62 fm. level south, on the lead lode, are for the present suspended, and the men removed to drive the 120 fm. level, east of Hitchins's shaft, on Holmbush, or main, lode.—W. Lean: August 18.

LANIVET CONSOLS.—We have just intersected the lode at the 80 fm. level, and cut through its flookan part, which is about 15 in. wide, producing some good ore; we cannot say much about the capel part until it be cut through, which will take us the greater part, or the whole, of next week; but from what we have seen, which is but little, there is yellow ore in this part, but from the great quantity of the water coming from the lode, we can say but little about it—the other parts of the mine are much the same as last reported. We shall sample on Monday 99 tons of ore.—H. Williams; W. Michell.

KIRKCUDBRIGHTSHIRE.—Since writing you on the 8th, we have a considerable improvement of lead in Stewart's shaft; have put the men to drive east and west. The west end is producing 2½ tons of lead per fathom—the east end, 1 ton per fathom; and, in a very few days, these ends will be out of the way to resume sinking the shaft. *Aug.* 13.—Since writing you yesterday, we have a further increase of lead, driving east at Stewart's, producing two tons per fathom, with a shade of improvement in the west end also; and it is fortunate to see the lead larger going down in each end than it is upwards. *Aug.* 15.—The lead continues to look much the same as stated in my last; we have it from 4 to 8 in. wide (solid) going down in the bottom.—J. Buzzo.

HERODSFOOT.—In continuing the bottom, or 62 fm., level, the most pleasing hopes are entertained by the productiveness and general appearances of this level; the lode varies to 4 ft. wide, from whence some of the largest and richest stones of silver lead ore seen in this district has been broken, more especially from the stopes. The end, driving north, is looking extremely well.

SOUTH MARIA.—Our adit is cut; the dam is fixed across the Tamar, to raise the water to work the wheel; our wheel, of 12-feet breast, as well as flat-rods, pulleys, bobs, &c., all progressing; we hope to work the shaft again by the 1st of Sept. We have cut a new, or caunter, lode in our wheel-pit, producing rich stones of copper.—J. Chanhall.

TAMAR SILVER-LEAD.—The engine-shaft is down to the 150 fm. level, we intend to sink about 3 ft. more for a fork, and then commence driving south. In the 145 fm. level the lode is 18 in. wide, composed of capel and ore, saving work, but not rich. In the 135 fm. level the lode is 8½ ft. wide, producing work of a good quality. In the 125 fm. level the lode is 2 ft. wide, work of a promising appearance. In the 115 fm. level the lode is 6 in. wide, composed of flookan, with a small quantity of ore. In the 105 fm. level the lode is 2½ ft. wide, saving work, though coarse. In the winze, in the bottom of the 135 fm. level, north of the shaft, there has been no lode taken down since last report. In the engine-shaft, at north mine, the lode is 18 in. wide, composed of capel, with strings of mundic. At Wheal Hancock, we have driven east, at the 27 fm. level, about 2 fms., and the ground favourable for driving. At Holes Holl we have erected a whim, and sunk the shaft 15 fms. below the surface. In the adit we have also cut the lode, it is about 2 ft. wide, composed of flookan, mundic, and white iron.—J. Sprague: August 17.

TINCROFT.—In reporting to you on the state of these mines, I beg to say, that the ground continues hard in the new engine-shaft, sinking below the 90 fm. level, so that our progress is slow; the lode in the 90 fm. level east is 2½ ft. wide, producing some good quality ore, worth about 15*l.* per fm.; the lode in the 90 west is 2 ft. wide, composed of mundic and iron, with some rich grey copper ore—a very promising lode. The lode in the 80 east is 2 ft. wide, producing occasional stones of ore, and kindly; the lode in the 80 west is 2½ ft. wide, orey throughout—will turn out three tons of copper ore per fathom, worth 5*l.* per ton; the lode in the winze, sinking below the 70 fm. level, about 5 fms. beyond this end, is 2 ft. wide, worth 12*l.* per fm. The lode in the 70 fm. level east is 3½ ft. wide, producing good work for tin, worth 20*l.* per fm.; the lode in the 70 west is 2 ft. wide, worth 12*l.* per fm. The 60 end east is suspended, and the men put to sink a winze below that level, where we have a lode 3 ft. wide, pretty good work for tin; the lode in the 60 west is 2 ft. wide, producing some copper ore and tin, and very promising. The 50 east is set on tribute, in order to make the men careful of the tinstuff. We are still extending a cross-cut south from the 50 west, and expect to find the south part of the lode in a short time; our pitches in this part of the mine have, on the whole, improved since my last. Palmer's shaft is now about 5 fms. below the 70 fm. level; the south lode is still in the shaft, but unproductive; the north lode is standing to the north of the shaft; the lode in the 70, west from said shaft, is 20 in. wide, producing 1½ ton of ore per fathom, worth 6*l.* per ton—this end is very promising indeed; beyond it, about 10 fms., we have a good lode in a winze sinking below the 60, at 7s. 6d. tribute—no tutwork; the pitches, in this part of the mine, continue to yield good work. At the south mine, the lode in the stopes, to the east of the engine-shaft, in the bottom of the 152 fm. level, is 3 ft. wide, worth 20*l.* per fm.; the stopes to the west of the shaft is worth 15*l.* per fm.; the lode is large and tinney throughout in the 152 west. The 142 east is producing some tin. The lode in the 120 east is 2½ ft. wide, worth 20*l.* per fm. The lode in the 110 east is 3 ft. wide, producing good work for tin. We have sunk the winze in the bottom of the 100, near the boundary, 5 fms.; but are now obliged to suspend it till the 110 end gets further on to take down the water; the men will now stope west from the winze, where we have an excellent lode for tin, worth 30*l.* per fm.—stoping at 50s. per fm. We expect to sell about 1100*l.* worth of tin this day fortnight; and expect to sample 400 tons of copper ore on Wednesday next.—W. Paul: August 17.

TRELEIGH CONSOLS.—At the 100 fm. level, east of Christoe, the lode is about 2½ ft. wide, producing stones of ore, and a very kindly appearance; at the 100, west of ditto, driving by the cross-course, on a small branch. At the 90, west of ditto, the lode is very small—no ore; at the winze below the 90 east, the lode is 3ft. wide, and worth 10*l.* per fm., sinking on the 100 fm. level end; at the 90, east of Garden's, the lode is 15 in. wide, and worth 10*l.* per fm. in elvans; at the 90, west of ditto, the lode is 3½ ft. wide, and worth 45*l.* per fm., with a very kindly appearance. At the rise above the 70, west of Good Fortune, the lode is 3 ft. wide, caples in general, and very hard for breaking. At the winze below the 60, on the above, the lode is 3 ft. wide, not much ore—hard; about 10 ft. more to hole to the rise. At the 60, west of Symons's, the lode is 2½ ft. wide, and worth 6*l.* per fm. At the 50 cross-cut north, driving north as usual—we think there is more lode before us; at the 50, west of Symons's, the lode is about 2 ft. wide, producing stones of ore. At the 34, west of ditto, the lode is 20 in. wide—no mineral. At the 20, west of ditto, the lode is 1 ft. wide, unproductive. At the adit, west of ditto, the lode is small—no ore; at the west shaft nothing done this week; no air to work it at present.—W. Symons: August 15.

UNITED HILLS.—At the 90 fm. level, east of Williams's, driving south, we are driving to cut through the south lode, worth 20*l.* per fm.; in the 90, west of Williams's, the lode is 2½ ft. wide, worth 30*l.* per fm. In the 80, east of ditto, the lode is 4 ft. wide, worth 10*l.* per fm. In the 70, east of eastern shaft, the lode is 18 in. wide, worth 4*l.* per fm.; in the 70, west of James's shaft, the lode is 2 ft. wide, poor. In the 50 cross-cut south the ground is a little improved since last reported. In the shallow adit east the lode is 3 ft. wide, worth 6*l.* per fm. At Wheal Charles, in the 40 fm. level, east of Gibson's shaft, the lode is 2½ ft. wide, worth 12*l.* per fm. At Wheal Sparrow, in the 40 fm. level, west of Richards's shaft, the lode is 1 ft. wide, poor. In the 30, west of Turner's (with 5s. 6d. tribute), the lode is 3 ft. wide, worth 12*l.* per fm.; in the winze under the 30, west of Richards's, the lode is 2 ft. wide, worth 9*l.* per fm.—Thomas Trevenen; Robert Williams: August 14.

WHEAL BLENCOWE.—I am happy to inform you, that our mine is looking very kindly; we are now stoping our backs on tribute, and they are getting on very well. We shall rise more tin this month than has been raised the last two. We have cleared our adit level—that is, the old men's workings—and have found uncommon vacancies, which is a sure sign they must have had a great deal of tin. We are driving our 10 fm. level east under the old men's workings; we have a very wide lode, with very good work in it. Our lode in the bottom (20 fm.) level has been very good—better than has ever been seen in this mine; we have a lode now in the bottom of the level about 2 ft. wide, exceedingly good; but in our present end the lode seems to be disordered with a bed of killas, which is of common occurrence in this mine.—J. Dale: Aug. 18.

WHEAL CARPENTER.—This is an extensive sett, in the parishes of South Sydenham and Milton Abbott, in the county of Devon. At the western extremity of the sett, an open lobby has been brought up, about 30 fms., where it intersected a very promising lode, running east and west, through the whole extent of the sett. The lode is about 8 feet wide, composed of quartz, gossan, stones of copper ore—carrying a leader of silver-lead on the north, with rich lead flookan: some of the ore has been assayed, and is found to produce 40 ozs. of silver in the ton of ore. The lode has been dialled, and is found, beyond all question, to be a continuation of the Wheal Concord and Wheal Grace lodes—being to the west of those mines, immediately contiguous to Wheal Grace. We are now sinking a shaft, and intend to drive to cut the lode at the 10 fm. level; and we expect to cut the lode at this level in about a month, and shall easily be able to do so with a horse-whim, which is now in course of erection. The killas through which the shaft is sinking is of a very promising nature; and we have cut several strings in the shaft dropping into the lode, in which we have met with some good specimens of copper. From the present appearances, I think we may fairly expect to raise a considerable quantity of silver-lead ore at the 10 fm. level; and, from the gossan and copper shown in the back, and the copper found in the droppers in the shaft, we have every prospect of a good copper mine in depth.—J. Key: August 15.

WHEAL THOMASIN.—Below is my report of this concern, made according to the view I had of it to-day; and, though such an interesting piece of mineral ground as the Burckcombe estate could not be very fully investigated in a short time, yet I saw enough to warrant my saying much in its favour, especially as this sett is situate between the Langstone and Bowden-hill Manganese Mines, and the great lode, which is so valuable in each, runs through it. The geological character of this ground presents a singular feature, so far as it is developed by the excavations; as, for a considerable length, there is an extensive run of blue killas—therein intersecting which are almost universally productive of copper. Three large lodes have been opened, and partially explored: the adit on the south lode has been driven about 30 fms., and presents, in various parts, excellent indications of ore, and water, strongly impregnated with copper, exudes in different places from the lode; and, in one part, I saw some rich malleable, or native, copper broken. The cross-cut north has been driven about 20 fms.; and, at about 17 fms. from the south lode, another very promising lode was cut, and on which a level has been driven about 13 fms., during which it was found to contain mundic, spar, and other favourable indications, with a soft hulk, or flookan, at the south, and the ground easy for breaking, but the end is at present a little disordered. To the north of this lode a cross-cut has been driven about 8 fms.; and, even in this short distance, a very valuable lode has been discovered, about 3 ft. wide, and composed of gossan, spar, malleable copper, &c.—stones containing which I broke while in the mine. About 3 fms. have been opened on its course, which is nearly east and west; and I have no doubt, that, as this level is continued further north, more lodes will be intersected. I would, therefore, recommend that this cross-cut be driven in the direction which Capt. Robins has so judiciously planned; and, also, that a water wheel, of about 30-feet diameter, be erected, to sink at least 40 fms. deeper, to explore these very promising lodes. On the whole, I consider this a favourable sett, and one which offers a fair prospect of remuneration to the proprietors.—J. Paull.

WEST WHEAL JEWEL.—At the 115 fm. level east, on Wheal Jewel lode, the lode is 15 in. wide, producing little ore—ground more favourable for driving. At the 100 fm. level east, on the same lode, the lode is 18 in. wide, and worth 5*l.* per fm.; at the 100 fm. level west, on the same lode, the lode is 1 ft. wide, 6 in. orey, and worth 3*l.* per fm. At the 85 fm. level west, on the same lode, the lode is 1 ft. wide, and worth 5*l.* per fm. At the 12 fm. level, on Tolcarne tin lode, the lode is 2 ft. wide, not looking so well as when last reported, and worth 13*l.* per fm.; at the 12 fm. level east, on the same lode, the lode is worth 4*l.* per fm. No alteration in any other part of the mine since our last.—R. Johns: August 17.

WHEAL AGNES.—I beg to hand you the report of the above mine. The men in the adit level have cut the lode; it is 2 ft. wide, composed of flookan, mundic, and capel. The men on the stopes are breaking good stones of silver-lead ore.—B. Robins: August 17.

WHEAL LOUISA.—The engine-shaft is down 13 fms. 3 ft.; and I am happy to say, that the ground through which we have been sinking is looking well; the branches have also improved both in size and quality since my last. We are progressing very favourably.—J. Chynoweth: August 20.

FOREIGN MINES.

IMPERIAL BRAZILIAN MINES.—*Gongo, May* 13.—The jacotinga near Socorro has a favourable appearance, but it contains no gold. At the 28 fm. and 47 fm. levels we are continuing our trials on the new hard formation: we have stamped some from the latter locality, but it is poor. At the 84 fm. level, west of Crickett's shaft, we have obtained some promising samples, but, at this moment, the end is in disordered ground. We have effected the communication between the shallow level, east of Bray's shaft, and the cross-cut north from Harris's; and as we are now obtaining a larger quantity of jacotinga there than the Great Western can crush, we can conveniently carry it to the Eliza stamps, which has lately been supplied from the superficial part of the vein, which is very poor. We continue to obtain small quantities of work for the washing-house, from the back and bottom of the shallow level daily, and there is yet a large tract of untried ground to be examined.—W. J. Henwood.

May 23.—Our hard formation at the 48 fm. level is very poor, but we intend driving a short distance eastward at that depth, as also trying it at the 27 fm level without delay. In the western part of the mine, near Brays and Harris's shafts, our hopes during the past 10 days have been much disappointed; the new vein has always a very promising appearance, is never many hours without showing specks of gold, but hitherto it has not answered our expectations; it still looks as well as ever—and as there is a vast tract unexplored, we may still hope for success, more particularly, perhaps, when we get so far east as the parallel of riches on the other veins. The other parts of the mine, and the trial beyond Socorro, call for no remark at present. The cross-cut from Thomas's shaft, at Catta Preta, has not yet reached the lode, but we are in hourly expectation of its doing so; it has been found impracticable to force our shield through the mud, which lies between Fitzpatrick's shaft and the lode; we have, therefore, resumed sinking a shaft long since commenced, and as the ground there seems well drained, we are sanguine of reaching the lode in a few weeks. We have stamped large quantities of the refuse from the ancient workings here, and even this (surely not the best of it) would pay, if obtainable in sufficient quantities; your commands on this subject have my most careful attention. *June* 3.—The gold troop, under Mr. Alston's command, left this place on its way to Rio, early on the 23d ult. The remittance is contained in two boxes, and amounts to 90 lbs. 9 ozs. 8 dwts. 3 grs. troy of gold dust, exclusive of the Government duty of 10 per cent. levied here, which I hope may come safely to hand. I am sorry to say our trials of the hard formation, though still in progress, are not encouraging. At the 41 fm. level, near Curtis's shaft, we have intersected a small vein of jacotinga, north of the old workings, but at present we cannot say much of its value. At the 84 fm. level, west of Crickitt's shaft, we obtain small samples of gold from an encouraging vein, and this part of the mine must receive more attention than has yet been bestowed on it. In the western part of the mine we still continue to see specks of gold in many parts of the vein, but hitherto our hopes have been disappointed—appearances, however, still encourage us. At Catta Preta, our cross-cut from Thomas's shaft, at the 18 fm. level, has reached ground so soft, as to impede its progress, and at the new shaft we have also intersected a similar formation. These circumstances call for a thorough and careful inspection of every part of the mine, before we determine as to our future progress. Captains Pengilly and Gay have made their examination, Capt. Luke's is now in hand, and to-morrow Capt. Blamey and myself commence ours. The fate of this mine now lies within very narrow limits, which we shall probably reach before my next.—Gold workings from 23d to 30th May, 8 lbs. 7 ozs. 15 dwts.—W. J. Henwood.

ST. JOHN DEL REY MINE.—*Morro Velho, May* 28.—Every thing is going on very regularly in the St. John del Rey Mine. The syphen was tried on the 26th instant, and the result was most gratifying. It passes on to the mine, at a height of about 168 ft., a flood of water, and the whole work is well executed. The joints are perfect. A few fms. of leat remain to complete on the mine side of the syphen, which will be ready in two or three days, when the syphen will go regularly to work—when the pumping wheel to Herring stamps will be for ever independent of any temporary assistance from little tanks of reserved water. *From Diary, May* 26.—The syphen was tried to-day, and was most successful. We could not fill the bell-mouthed entrance to the pipe—it swallowed up the water so fast. There must have been some 400 cubic ft. water passing through the syphen per minute, and it is clear that a great deal more will easily pass through it; Captain Treloar calls it a glorious thing for Morro Velho.—262 lbs. gold (worth 10,400*l.*) expected per packet.

[FROM CORRESPONDENTS.]

Birch Tor.—Perhaps few mines will show the efficacy of judicious management quicker than this mine; involved as she was a few months since to almost a complete suspension, has been resumed by an enterprising company of adventurers at Plymouth, who have cleared her levels, and brought her into a perfect state of operation. The last sale of tin amounted to 7 tons, which brought 359*l.* 12s. 6d., and they have now ready for market 12 tons of equal quality.

Devon and Courtney Consols.—The committee of management, on Monday last, resolved on sinking the shaft on the course of the new lode, which holds out so much encouragement, and have removed the horse-whim from another part of the mine to this shaft, to enable them to sink with more facility, until the engine is completed and the underground operations are more matured, the water being too much for manual labour. The lode in the shaft is from 5 to 6 ft. wide, yielding good saving work, and has been opened upon a few fathoms further west, where it has a very good appearance, being very orey and in a beautiful strata. They have also commenced taking up an adit on the course of the lode, which takes the shaft at a depth of 20 fms., and there is very little doubt but some good discoveries will be met with in their progress.

East Caradon.—Although reports from this mine are not regularly furnished us, we are at all times pleased to publish such statements respecting the mine (on which we can place confidence), for the benefit of distant shareholders, as well as the mining community in general. A respected correspondent and shareholder informs us, that they are now sinking a winze on the course of the lode, under the adit, which is 18 in. wide, containing good saving work. Capt. Clymo (the managing agent) calculates on being able to sink 7 fms. under the adit, without machinery, and will be able to break away a considerable portion of ore to that depth, whilst the engine-shaft is in course of sinking; and he hopes shortly to have a sampling. There is but little doubt this mine will prove as good as the other Caradons—the whole of the lode being strongly impregnated with copper ore, at its present depth. The samples of ore which we have seen, are of good quality; and we sincerely trust that the enterprising spirit of the company may meet its due reward.

Ellborough Mine, situate in the parish of Banwell, near Weston-super-Mere, Somerset. This mine was commenced last year, and worked by a few men in a very inefficient manner, but to a profit to the proprietors. It is now in the hands of some Cornish miners, who report most favourably of the lodes, being large and promising; and although they have not discovered courses of lead, they have found that the ground is productive of lead and calamine. In the north lode, they have tributers working at 12s. in the 1*l.* for lead, and 8s. in the 1*l.* for calk, who are getting good wages. Calk is in demand by iron-founders, and can be sold at an excellent profit, whilst the calamine is in request for the manufacture of brass.

South Devon Consols Mine.—A new powerful water-wheel commenced work at the mine, on Wednesday last, as a pumping engine; it is 30 ft. high, and 6 ft. breast, and commands a plentiful supply of water in all seasons, and is calculated to drain the mine to a depth of 60 fms. The water is conveyed to this wheel for a distance of about 200 fms., in substantially built wooden launders, at a height of 25 or 30 ft. from the surface, which, on approaching the mine, forms an object of considerable importance. The expense of such a formidable range of launders, which for a wheel of this power could not be dispensed with, was considered so objectionable, that one of much less dimensions was at first suggested; but, in extending some distance at the adit level on a very fine lead course, another copper lode was intersected, 3 ft. wide, which, in driving, proved altogether of such high pressure, producing rich stones of ore, embedded in fine gossan and spar, that at a meeting of the shareholders, it was determined to erect machinery to work the mine efficiently. There are three copper and two lead lodes, which cross almost at right angles, within a distance of 80 fms., and the whole character of the lodes and strata indicate the most favourable results at a greater depth. While the work of sinking the engine-shaft is progressing, operations will be carried on at the adit level, on the lead course, from which almost immediate returns may be expected.

Wheal Concord.—The lode at the 10 fm. level, is 18 in. big, producing good work, and in every respect improving in its appearance and character, as the lode is worked upon in carrying on the level, which may be expected to communicate with the new shaft in a few weeks, and thus give effect to the ventilation. The air machine is found to answer well. There are 14 or 15 tons of ore

at surface, which will produce 14½ for 20, with some 12 or 15 ounces of silver. Altogether the mine is looking well, and being pushed forward with vigour.

WHEAL CONCORD.—They are again raising lead in Concord. There is a pretty pile of ore—I suppose about 15 tons on the floors. Things are looking well here.

WHEAL PENCORSE MINE.—From accounts, furnished by the purser (Mr. S. S. Bassett), it appears, that the total cost for June, 1844, to June, 1846, amounted to 1416*l.* 2s. 11½d., exclusive of some bills not entered, and less 157*l.* 13s. 3d. of that amount, not paid at the time the account was extracted, but part of which has been since paid; and that the amount of actual receipts during the same period for calls, was 1262*l.*—leaving an actual balance in the purser's hands of 8*l.* 10s. 3½d., besides arrears of calls, amounting to 146*l.*; against which there are the bills above-mentioned not entered, and the damage done to the land, which must come into the next account.

WHEAL ROBARTES.—In this sett they are progressing very favourably, the lode at Phillips's, is 2 ft. big, composed of mundic, gossan, spar, &c., and is now looking more kindly than before. They are sinking a shaft at the western part, on a lode 4 ft. wide, which has a promising appearance.

WHEAL WALTER.—At this mine they have taken a floor or branch, at about the 20 fm., in sinking the shaft; but it is evidently not the lode which they expect to cut, in some 6 fms. or 8 fms. further sinking.

WHEAL WILLIAMS.—The workings at the lower shaft, where a horse engine was erected to keep the water, have been suspended from want of power. It is proposed to erect a steam-engine of considerable power, without loss of time. The upper shaft is continued sinking, with fine gossan in the back of the lode.

MEMORANDA ASSOCIATED WITH CORNISH MINES.

[FROM A CORRESPONDENT.]

WHEAL WILLIAMS.—The terms on which this mine is held cannot be too oft brought under the notice or attention of the mining public. The land is principally, if not wholly, Duchy; and, as the sett is contiguous to Wheal Maria, it was presumed that some of the lodes—or at least parallel lodes—would pass through it, and that Cornwall might derive some of the vast advantages which now benefit the Devon side of the Tamar. Accordingly, some 39 parties applied to the Duchy for the sett, and, in the end, it was granted to the present party at 1-12th dues; in addition to which, 30 per cent. was agreed to be paid out of the profits—so that a reduction to such extent must be made ere any division can be made among the shareholders!

WEST WHEAL WILLIAMS.—A circumstance has just come to our knowledge which requires investigation. Immediately adjoining to Wheal Williams on the west, and Wheal Benny on the east, is a tract of ground, part Duchy and part belonging to Mr. Oliver; the several rights being so intermixed, that it would be impracticable to work either sett alone—and thus the necessity of amalgamating the Duchy with the freehold interests. We are informed, on good authority, that the Duchy rights were granted or promised to Messrs. Williams, Taylor (*query:* the Duchy officer?) at 1-12th dues, provided arrangements could be made with the lord of the free land (Mr. Oliver). The latter requiring an equal division of the shares, in case the lands were worked together, and offering to take the same dues as the Duchy, some delay has taken place in the arrangement being perfected—inasmuch that, as we are informed, more than one-half of the shares were determined upon as being reserved or promised. It is, however, only of late that something like a compromise has been broached, which is, that Mr. Oliver shall grant to the Duchy at 1-14th; and that they shall resett at 1-12th—thus securing 1-7th of the dues. Here, then, is the Government attempting to impose terms on the individual who is taxed to support it and its officers.

TRELAWNEY MINE.—An arrangement has been entered into with the Rev. Mr. Honey, for the working of the Trelawney lode in an adjoining field to the sett at present acquired, belonging to that gentleman, whereby he receives, in addition to the royalty or dues, no less a sum than 1200*l.* It is acts of this nature that are most calculated to destroy the mining interest. The field could never have been worked by any independent party; but the Trelawney adventurers and the reverend lord could never have obtained any dues. Why, then, should he exact from his neighbours a fine for having explored at their own cost the mineral resources of the estate, and be taxed for paying him a rental, which, without their capital and enterprise, he would never have received. We cry shame on all these movements, which reflect disgrace and discredit on not only those who receive, but those who either establish the precedent, or uphold it, by acting on a system so much to be reprobated.

SOUTH TRELAWNEY MINE.—This is another of those attempts, and successful in the present instance, of exacting a bonus on granting the sett—2000*l.* having been required by the lord, and which was assented to by the projectors of the company; we presume, in expectation of the bonus they might realise from the premiums on the shares when put in the market, careless what may be the balance as to the profit and loss account to those who may become the *fortunate* adventurers. The price of the shares shows that they, like the shaft, are going downwards.

WHEAL TREHANE.—The Trelawney lode runs through this sett, but at an angle, which can give but a few fathoms in extent—the lode underlaying east, and thus coming again into the Trelawney sett in depth. The shaft has been sunk 20 fms., and a cross-cut driven 7 fms. to 8 fms. east, to take the lode; but, as the distance from the shaft to the eastern boundary cannot exceed 12 fms., with an underlay of 2 ft. in a fathom, and the lode dipping away east, it must be apparent, that there is but little run of lode or extent in depth. It is only right to state thus much, as erroneous impressions might arise from the representation, that the Trelawney lode traversed the sett, without any reference being made as to the extent or underlay. We understand Capt. Penrose has lately inspected the mine, whose report, as to the appearance of the lode, is no means favourable.

WHEAL MARY ANN.—While adverting to the Trelawney, Wheal Trehane, and South Trelawney setts, one word may not be amiss as to this mine, which is held under Miss Pollard, and which was granted, as we are given to understand, under the impression that it was conveyed to the Trelawney adventurers; but the wise men of the west, having obtained the grant, determined that they would have the lion's share; and hence the question that has arisen, and, as we are informed, is referred to arbitration—that of the right to the mine. We believe but one opinion exists amongst men of common sense or honesty, that the sett belongs to the Wheal Trelawney adventurers—while, waiting the decision, shares are transferred with all their chances in the one or other mine. Our more immediate object in directing attention to this mine, however, is that of the bonus or sum given to Miss Pollard—the lord or lady, as our readers may will it—on granting the lease; this, we understand, was 2000*l.*—that is to say, 1000*l.* down, and 1000*l.* out of first returns. This was, doubtless, readily assented to by those who *secured* the sett, regardless of all matters, so far as honour or fair dealing was concerned. We have only to observe that, in this case, as in others, both the one and other (the taker and grantor), deserve to be exposed—while, we trust the precedent will not be followed by those who intend to apply their capital to exploring and working the lodes, and not the *shares*.

WHEAL BENNY.—The wheel recently constructed at this mine is expected to go to work at the end of the present week, when active operations will be resumed in proving the lode in depth, which is of a highly promising character, and yielding good work at the present point to which it has been sunk upon—being only 16 ft. below surface. The lode appears to be going down perpendicular, or nearly so. It is proposed hereafter to put up a second wheel, so as to render available the tail water from the wheel now in course of erection, as also to bring in another stream at a lower level. We may observe, that no power can be reckoned upon from the Tamar river, although the wheel is built on its bank, as there is not more than 7 ft. fall from Horsebridge, according to the direction of the river. Another lode has been cut north of the lode immediately next the water-wheel, which has a south underlay near to surface, where it has been seen. It is expected that the lodes in Wheal Williams, South Wheal Maria, and South Wheal Williams, run through the sett.

SOUTH WHEAL MARIA.—We understand some difficulty has arisen in forming the weir head or dam across the Tamar, intended for the purpose of raising the level of the river at this point, with a view of directing its course through the South Wheal Maria sett for its being applied to the water-wheel in course of erection, which is 20 ft. in diameter, with 12-ft. breast—the agents of the Duke of Bedford having signified their dissent from it being communicated with the duke's property, as being calculated to be of injury. We presume some arrangement will be come to; the question is one of more importance than would at first appear, as it involves the point of right of water, which, it is not clear to us, can be availed of by any one tenant of land on the banks to the prejudice of another.—(*Query:* to whom does the right of water belong?—if to the Duchy, then who claims the minerals?)

CHIANTLA MINES.—It will be recollected, that the directors of the company formed for working some mines in the presidency of Guatamala, sent out several experienced miners to inspect and report on the property, previous to commencing operations; we are glad to find, by a letter just received, that the agents—Messrs. Young Anderson, Rodda, jun., Capts. Hoskins and Matthews—had reached Ysabal, in perfect health, and were preparing to pursue their journey up the country.

BRAZIL.—The frigate *America*, has just arrived, and brings accounts from Rio de Janeiro to the 22d of June. The amount of specie brought by this frigate has been much exaggerated; it turns out to be only $1,800,000, in place of the sum of $6,000,000 to $8,000,000 as reported. The *Petrel* packet had arrived out on the 17th June, and the *Express* was appointed to sail with the mail on the 28th ditto.

WEST INDIA MAIL.—The Royal Mail Company's packet-ship *Teviot*, arrived at Southampton on Wednesday evening, bringing mails of the following dates:—St. Jago de Cuba, July 19; Jamaica, 24; Demerara, 19; Barbadoes, 24; Granada, 25; and Guadaloupe, 27. She brings 73 passengers, $1000, and 168 ounces of gold dust, and a large general cargo.

ALTEN MINING ASSOCIATION.

A general meeting of shareholders was held at the offices of the company, on Friday (yesterday), for the purpose of receiving the report of the directors, and a statement of the financial accounts of the company.

JOHN LABOUCHERE, Esq., in the chair.

The CHAIRMAN read the notice convening the meeting, as also the minutes of the last general meeting, which were confirmed, when Mr. CARR (one of the directors) read the following report and accounts, as also a report received from the mine this day:—

REPORT.

At this annual meeting of the shareholders, the directors have to submit accounts for a period of 18 months, ending 31st March last; to report on their past proceedings, as well as the future prospects of the company. The directors stated, at the meeting in July last year, that from the result of the operations up to that time, a loss of 3000*l.* might be expected; and by the accounts to the 30th September, now before the proprietors, the result shows a deficiency of 2850*l.* 1s. 2d., being not far short of the amount contemplated. It will also be remembered, the directors informed you that instructions had been sent to the manager at Alten to reduce the establishment to such a point, that in the event of the produce not meeting the cost on a limited scale of working, and the proprietor being unwilling to remodel the concern, measures might be immediately taken to wind it up. This reduction was carried out by Mr. Engstrom in such a manner as assured the directors that he fully entered into the spirit of their instruction: having done all that could be effected in the way of reduction, he afterwards made over his own duties to Mr. Thomas, who has since conducted the affairs of the association, as manager, mining agent, and principal smelter, with a zeal and ability deserving our highest encomiums. The reduction of the establishment answered at once the directors' most sanguine anticipations—not only did the necessity of an immediate dissolution disappear, but some improvements taking place simultaneously, the directors have now the pleasure of stating that the mines are working to a decided, though not a very large, profit; and, by the accounts for the first six months of the present year, which are also before the meeting, it is shown, that our income has exceeded the expenditure by 1330*l.* 10s. 1d.—and should the advices continue equally favourable up to October next, the directors will not hesitate in declaring a dividend of 5*s.* per share. It is gratifying to the directors to be able to report this very improved state of affairs; at the same time, they must call to the notice of the shareholders the fact, that though the mines are now working at a profit, and the finances are in a healthy state, yet they are making no reserves. Whilst carrying on the work, however, should any new course of ore be met with at Raipas (our richest and most fluctuating mine, and which has always yielded very profitable returns), the directors will at once be able to take advantage of it, and the profits may supply a capital for making the reserves, of which we so much stand in need; or, should a favourable opportunity offer of increasing the capital, in order to work on a more enlarged and satisfactory scale, they will not fail to communicate their views on the subject to you. The directors have the pleasure to report another important improvement which has been effected—viz.: the suspension of the smelting operations during the summer months. The present plan enables the manager to carry on the incidental summer work without increasing the number of hands, or taking them off from productive labour—whilst the ore is accumulating in such quantities, as to enable him during the winter to make the most advantageous mixtures for smelting. The cost of smelting the ore is now reduced to 26*s.* per ton—whilst it will be remembered, in our last report, we considered 33*s.* per ton a very low rate. The accounts received from the mines since October have been, and continue to be, very satisfactory; and, from the last report from the manager at Alten, in whom the directors have full confidence, they do not anticipate any falling off. The directors trust they have thus shown that your affairs have received their best and most earnest attention; and, although they cannot report them to be in as brilliant a state as might be wished, yet, compared with the reports they have too often had to lay before you, they hope this will be received with satisfaction.

Estimated Produce for July.

Mines.	No. of men.	Tons ore.	Per ct.	Tons copper.
Raipas	20	76	6½	4·94
United Mines	10	35	4	1·40
Ryper's	8	16	7	1·12
Mancur's	16	15	6	0·90
Old Mine	4	10	6	0·60
New lodes	2	8	6	0·48
Total	60	160		9·44

Mining Report from 9th to 31st July, 1846.

Raipas.—Although the produce of this mine has latterly experienced little or no increase, the prospects during the last month have materially improved. One of the gossan lodes in the shallow adit workings is now so well defined, that we have no longer any hesitation in pronouncing it a separate and distinct lode, containing rich gossan, and yellow and purple ores, and possessing more flattering prospects than any previous discovery at this place, and at the same depth. To distinguish this part of the mine from the other workings, and should it meet your approbation, we propose calling at Labouchere's lode, and hope the alternate result will prove it worthy of the name. Between this, and the old lode, we have every reason to suppose another lode exists; the trials here made have not, as yet, led to any definite conclusions, as though the workings are now nearly 20 fms. below the surface: in this part of the mine, we find the rounded pebbles of copper pyrites embedded in clay, in cavities in the hard limestone rock. What appears to us as the lode, is a large deposit of gossan, intersected with numerous small irregular veins of rich black sulphuret of copper, earthy cobalt, and peroxide of manganese. The returns from this part of the mine, from being so intimately blended with clay and earthy matter, are not rich, but regular; and we hope, ere long, the indications we are at present following, will lead us to a more settled and compact stratum, and well defined, and regular lode. The ore driving continues uninterruptedly, and we are crushing and preparing the returns for the smelting-house.

United Mines.—No important change is to be noticed since my last report—if any alteration has taken place, it is a trifling improvement in the eastern stope, on Ward's lode. At Woodfall's we are merely picking over some halvans at the surface, with women and children.

Old Mine.—All the halvans in the middle sink have been returned, and we have commenced an experiment on the large heaps at the surface; the returns are better than expected.

Mancur's.—The lode in the south level has been intersected, and removed by a cross-course; and the returns of ore during this month have, in consequence, been very small. An improvement is, however, again visible, and the lode is increasing in size, and becoming more orey. The other workings continue as last reported, on a hard orey lode, yielding the average produce.

Ryper's.—The roof stopes is now exhausted, and its further prosecution has been stopped; the men are employed in exploring some of the lodes in other parts of this mine. The foot stopes have improved, and will at present make good the deficiency that would otherwise have been felt from the suspension of the roof stopes.

New Lodes.—For reasons before assigned, our progress has been slow, the workings have been irregular, and confined to one or two places; the returns of ore are good, and as much as we could expect before the lodes are uncovered to a greater extent; we shall end eavour to get a level under cover before the winter setts in.

Ore Dressing.—The stocks of smalls and other ores for jigging, have not been sufficient to employ one separator constantly; but the result of this, as well as the stamps work, has been very satisfactory. We hope in the next delivery note to include the returns from Mancur's, Ryper's, and the Old Mine.—S. H. THOMAS.

Receipts and Disbursements for Six Months.

1846—March 31—To disbursements at Alten	£3195	16	4
London expenses	221	6	4
Total expenses	£3417	2	8
Cost of galliot	500	0	0
Effects at Alten	4123	13	7
Assets in London	8048	3	11
Total	£16,089	0	2
1845—Sept.—Assets at Alten	£3970	1	7
Assets in London	7351	5	10
1846—March—Produce of copper, 54½ tons	4767	12	9
Total	£16,089	0	2

The CHAIRMAN took the opportunity of congratulating the proprietors on the improved prospects of the mine, which, by the accounts now submitted, showed a profit for the last half year of 1300*l.*; and should appearances continue as favourable as at the present moment, of which he entertained not the least doubt, he should have the pleasure of declaring a dividend of 5*s.* per share at the October meeting. It would be in the recollection of the proprietors that, at the last general meeting, the directors estimated there would be a loss on the year's workings of about 3000*l.*, and by the accounts it appeared that it was 2800*l.*; but as they were now working on a very reduced scale, and the expenses limited, the directors had thought it best to write off the loss to capital accounts—there being ample capital to carry on the present works; and should their prospects improve in a way to warrant such a proceeding, they would submit to the proprietors the necessity of increasing their capital—at the same time, they did not contemplate anything of the kind for some time to come.

Mr. POYNDER expressed his satisfaction at the report and accounts just submitted; but, at the same time, strongly impressed on the directors the necessity of not branching out again into a ruinous expenditure; and that their agents should be made to understand that, unless the mine was worked to a profit, the mine would be stopped.

A motion having been made that the report and accounts be received and adopted, was carried unanimously,—A vote of thanks was then passed to the chairman and directors, for their exertions on behalf of the proprietors, to which the CHAIRMAN briefly replied, and took the opportunity of calling their attention to the great ability displayed by their late manager at the mine (Mr. Engstrom), who, when he found his services not required, had resigned.—A vote of thanks was then passed.

Mr. POYNDER, before separating, begged to call the attention of the meeting to the zeal and ability displayed by the secretary, Mr. Cole, in which he was borne out by many friends, who had witnessed his exertions, and courteous behaviour, on all occasions; and he could only regret, that circumstances did not warrant his proposing a more substantial proof of their respect, than to request the chairman to communicate to that gentleman the feelings entertained by the proprietors.—The meeting then separated.

BUDNICK CONSOLS.—At a meeting of adventurers, held on the 3d of August, the cost for May and June (including 187*l.* 6s. 3d. cost of steam-engine), 1467*l.* 12s. 7d.; balance end of April, 541*l.* 16s. 11d.=2009*l.* 9s. 6.—By tin sold (less dues, 70*l.* 12s. 9d.), 1342*l.* 2s. 6d.; carriage of tin, 21*l.* 4s. 9d.; received on account of call, 550*l.*=1913*l.* 7s. 3d.; from which deduct balance of 96.. 2s. 3d., and arrears of calls due, 90*l.*: leaves 6*l.* 2s. 3d.—The prospects of the mine are represented as encouraging, and returns increasing.

GREAT RESUGGA MOOR MINE.—At a meeting of the adventurers in this mine, held at Stickland's Hotel, St. Austell, on the 13th inst., pursuant to circular, the accounts were presented, showing the labour cost and bills for June and July, at 245*l.* 2s. 10d.; balance from last meeting, 51*l.* 17s. 4d.=297*l.* 11s. 2d. By tin sold, 33*l.* 7s. 3d.; amount of last call received, 107*l.*=140*l.* 7s. 3d.—leaving the mine now in debt, 157*l.* 3s. 11d. It was then resolved, that the foregoing accounts be, and are hereby, allowed; and that a call of 1*l.* per 256th share be made and declared, the same to be paid the purser forthwith.

WHEAL UNION.—At a meeting of adventurers, held on the 31st July, the accounts were presented, showing balance against the mine, of 1197*l.* 11s. 9d.; to meet which, a call of 9*l.* 10s. 1d. per share was made.—The Redruth Brewery Company having cautioned the managers not to foul, or otherwise render unfit for use for brewery purposes, the water flowing through Wheal Silver adit, it was was resolved,—That the notice should be referred to the lords, for obtaining their indemnity.

WHEAL SETON.—At a meeting of adventurers, held at the account-house, on Tuesday, the 11th of August, the accounts having been examined, were allowed, when it was resolved,—That a dividend of 15*l.* per share be paid forthwith, and that the balance (1720*l.* 0s. 4d.) in favour of the adventurers, be carried to credit of next account.—The accounts submitted showed the amount of costs for May, 769*l.* 8s. 3d.; June, 1549*l.* 9s. 9d.=2318*l.* 18s.; copper ores sold (less lord's dues, 338*l.* 14s. 10d.)=4742*l.* 8s.—showing profit 2423*l.* 10s.; add balance due from purser, to end of April, 781*l.* 10s. 4d., making total of 3205*l.* 0s. 4d.—By dividend, 15*l.* per share, 1485*l.*; leaves balance now in hand, 1720*l.* 0s. 4d.—The following report from Capts. P. Rabey and S. Lean, was read to the meeting:—"Bull's shaft is in course of sinking below the 80 fm. level, down from 9 to 10 fms.; no lode taken down since our last report. In the 80 fm. level west, on the south lode, the lode is 5 ft. wide, composed of spar, mundic, and stones of copper. In the 70 fm. level west on ditto, the lode is small and unproductive. In the 60 fm. level, west on ditto, the lode is 5 ft. wide, worth 20*l.* per fm.—this level is within 2 fms. of the winze, sinking below the 60. Nothing done in the 50 fm. level, west on ditto, since last account; the winze sinking below this level, down 6 fms., lode worth 30*l.* per fm.; the rise in the back of this level, lode worth 40*l.* per fm., up 6 fms. The 40 fm. level, west on ditto, lode 2 ft. wide, containing occasional stones of copper—the slide has not yet left this level. In the the 80 cross-course, north from Bull's shaft, we have intersected Kneebone's branch; we cut into it 2 ft. in the back, composed of spar, mundic, and ore. The 70 fm. level west, on the north lode, driven 8 fms. from the cross-course; lode 12 ft. wide, worth 150*l.* per fm. The 60 fm. level, west on ditto, driven 16 fms. from the cross-course, lode 14 ft. wide, worth 200*l.* per fm.; the stopes in the back of this level, are worth 150*l.* per fm.; the winze sinking below this level, has been communicated to the 70 fm. level, in the past month. The 50 fm. level, west on ditto, driven 10 fms. from the cross-course, lode 5 ft. wide, worth 30*l.* per fm. In the 40 fm. level, west on ditto, the lode is in disordered ground. We have resumed driving the 60 cross-cut north, to intersect other lodes. Tilly's shaft is in course of sinking below the deep adit, down 20 fms., ground harder for sinking than when last reported."—[The next account will be held on the mine, on Tuesday, 13th of October next.]

BEERALSTON SILVER MINES.

SIR,—I was much gratified, on last visiting the mining districts of the west, to find such rapid improvements in the old silver mines at Beeralston. This place, so remarkable for its dullness on my last visit, is now the scene of great bustle and activity—numbers of houses are being erected—and, notwithstanding this, five or six families are frequently compelled to dwell together. East Tamar has so rapidly increased her samplings, as to place her on the basis of permanency, producing about 50 tons of valuable silver ores per month, and this when scarcely one-fourth part of the mine is in operation. A powerful company is formed for the immediate prosecution of South Tamar, from which no less favourable results are anticipated. Wheal Agnes has commenced her samplings, and is the theme of general conversation.

This change may, in a great measure, be attributed to the spirited conduct of J. H. Hutchins, Esq., the respected manager of the above mines. I was also glad to find preparations making for increasing public accommodation in the town of Beeralston—a respectable inn being much required in this district. Many circumstances have lately come under my notice, where parties, after the fatigue of visiting these and other mines, have been under the necessity of going a long distance to procure comfortable accommodation; this inconvenience, it is hoped, will shortly be obviated. Mining, generally, in these districts, is wearing a better aspect; and I hope, ere long, to furnish you with accounts of greater prosperity.—A MINING ADVENTURER: *August* 20.

GREAT WHEAL ROUGH TORR CONSOLS.

SIR,—Among the Notices from Correspondents, appearing in your valuable Journal of August 15, I find there a report of a mine bearing the name of Great Wheal Rough Torr Consols, as being on a continuation of the Wheal Maria lode. Now, I must ask an explanation as to why the captain thinks it to be a continuation of the Wheal Maria lode? Perhaps he is not aware that the lode alluded to, even in the western part of the Wheal Maria sett, is split in two or three branches; I will, therefore, ask if it is possible for any miner to say, that the Great Rough Torr Consols lode is a continuation of the Wheal Maria lode, when the Rough Torr Consols is at least 16 miles west of Wheal Maria sett? The captain professes to have inspected a great number of mines in Cornwall and Devon. I should think him to be a very accomplished man as to the properties of mining—I should say a man very rarely to be met with—and not only that, a man of more value than all the mine agents in Cornwall and Devon. As soon as a man is placed in a situation as mine captain, he is always supposed to see 6 feet through a lode more than any common ordinary miner; but this person appears to be, and in fact must be, of very superior abilities to look 16 miles through hard granite, killas, &c., &c. I will ask, if it is possible for any man to go 16 miles east or west of any mine, and point out the direction in which the lode runs—or even presume such a thing? But I presume that this man lives next door to one who knows every thing about tutwork and tribute.—A. B. C.: *Aug.* 19.

SILVER MINE AT MAULMEIN.—We are informed that the discovery of a silver mine has been reported to Government by the surveyor of the teak forests at Maulmein, and that some specimens of the ores have reached Calcutta. It is well known that large quantities of silver are imported from the Burmese territories, but the exact localities in which this precious metal is worked have never, we believe, been ascertained. It it, therefore, by no means improbable that a workable mine may have been discovered within the British provinces. It could not have happened at a better time. Our supply from China is apparently exhausted; and unless South America can replace it, we bid fair to come to an end of our coinage. A productive silver mine would be a very pretty increase to the company's revenue. It might make up for a fall in opium, or allow a reduction in the salt tax. But as mining is proverbially a lottery, it would, perhaps, be best to let the mine to adventurers on contract, rather than to form an expensive establishment for what may prove to be of little value.—*Calcutta Englishman.*

CONVICTIONS UNDER LORD ASHLEY'S ACT.—Three convictions, in the mitigated penalties of 5*l.* each, have lately taken place before the bench of magistrates, at Crickhowell Petty Sessions, under Lord Ashley's Act, for preventing the employment of women and boys in mines and collieries, and the payment of labourers' wages at public houses. Unfortunately, the offenders are all poor, being sub-contractors; the masters, who were summoned in the first instance, having satisfied the magistrates that the offences were committed without their knowledge. Stringent measures, however, are about to be adopted to maintain the integrity of the Act.

MINE ACCIDENTS.

Serious Accident.—An accident, which might have been of a fatal nature, befell Capt. Hamblyn, of Wheal Williams, on the 10th inst., when, in stepping over a hedge, he was precipitated down a shaft headforemost to a depth of 16 ft. or 18 ft.; fortunately, the shaft had at that point been sunk on the course of the lode, and, coming in contact with the angle so formed, his further fall was prevented. Capt. H. is, we are happy to say, recovering from the effects—having broke his collar bone, and otherwise contused the shoulder.

Rowley.—J. Silvester was killed in Messrs. Apittle and Haines's Colliery.

Reywards, near Glasgow.—Two miners were killed here by an explosion. The shock was felt at a considerable distance—12 men who wrought at ironstone, about 13 fms. above the coal, were uninjured.

Thornham, near Rochdale.—T. Harrison was killed in a coal pit here.

Boiler Explosion—Caution to Engineers.—On Wednesday, at 12 o'clock, one of the boilers at Messrs. Bills and Mills's iron and steel works, Darlaston Green, exploded, and did considerable damage to the surrounding brickwork. It appeared that the engineer had gone away from the engine-house for some purpose, and left a brisk fire, and very little water in the boiler. Upon his return to the engine-house, he discovered the water to have evaporated, and on turning cold water into the boiler, it immediately burst into three parts, forcing a large quantity of the brick wall in all directions, and a considerable distance from the place. Fortunately no lives were lost by the accident, although the work was full of men and boys at the time.

Considerable alarm was excited in consequence of the partial firing of Messrs. Barker and Harrison's colliery. The pit caught fire at the top of the shaft, but the flame in descending providentially dashed itself out. The sides of the pit having been broken by the explosion, a considerable quantity of rubbish fell to the bottom, and shut the poor miners in. A stream of water was poured down the shaft, for the purpose of forcing back the choke damp, and producing a current of air sufficient to keep the men alive, till the rubbish was removed, which was effectual, though the poor men were greatly exhausted when liberated from their confinement, having been shut in 12 hours.—*Whitehaven Herald.*

EFFECTS OF RAILWAYS UPON CANAL PROPRIETORS.—The Grand Junction Canal shares, which a few years since were selling at 340*l.* per share, have fallen to 94*l.* per share; and the dividend, which was then 13*l.*, is now 6*l.* per share. As there are 11,506 shares, the proprietors have lost 2,828,000*l.* upon their capital, and their annual income reduced to 80,500*l.* in this undertaking alone.—*Irish Railway Gazette.*

RAILWAY SHARE LIST.

RAILWAYS.	Paid	*Closing pr. last week.*	*Closing pr. last night.*
Aberdeen	£10	8	8½
Amber, Nottingham, Boston, and Erewash Junction	2½	1½	1½
Armagh, Coleraine, and Portrush—25l. shares	1½	—	—
Birmingham and Gloucester—100l shares	100	131	127½
Birmingham and Oxford Junction—20l shares	2	—	6
Bristol and Exeter—100l shares	70	87	87
Bristol and Gloucester—50l per share	30	—	50*
Caledonian—50l per share	5	15½	15½
Chester and Holyhead—50l shares	27½	26½	26½
Direct Northern—50l shares	2½	1½	1½
Direct Manchester (Remington's)—20l shares	2½	—	⅜
Ditto Rastrick's	5½	—	—
Dublin and Galway—50l shares	4	1½	1½
Dundalk and Enniskillen—50l shares	7½		
Eastern Counties—25l shares	14l 16s	23½	22½
East Lincolnshire	1½	¼	¼
Edinburgh and Glasgow—50l shares	50	73½	69
Edinburgh and Northern	10	9½	10
Edinburgh and Perth	3	3*	
Exeter, Yeovil, and Dorchester—50l shares	2½	3½	
Goole and Doncaster—20l shares	42s	—	⅛ dis.
Grand Union (Nottingham and Lynn)	1½	½	½
Great Southern and Western (Ireland)—50l. shares	15	28½	28½
Great North of England—100l shares	100	235	230
Great Western—100l shares	80	145	149
Guildford, Farnham, and Portsmouth—50l. shares	5	—	5½
Hull and Selby—50l shares	50	107	104
Lancaster and Carlisle—50l shares	25	66	
Leeds and Bradford	26	69	68½
Leeds and Carlisle	2½	1½	1½
Leicester and Birmingham—20l shares	22s	—	*½ dis.
Leicester and Bedford—20l shares	22s	⅜ dis.	⅜ dis.
Leicester and Tamworth—20l shares	42s	⅜ dis.	⅜ dis.
Liverpool, Manchester, and Newcastle Junction	1½	2½	2½
London and North Western	stock.	228	207
London and Blackwall	Av. 16l 13s 4d	8½	8½
London and Brighton—50l shares	50	65½	63
London and Croydon	Av. 13l 15s 9d	23½	23½
London and Greenwich	Av. 12l 15s 4d	9	9
London and South Western	Av. 41l 6s 10d	75	75½
London and York—50l shares	2½	2½	2
London, Salisbury, and Yeovil—50l shares	2½	⅜	⅜*
Londonderry and Coleraine—50l shares	2½		6
Lynn and Ely—25l. shares	15	15½	16
Lynn and Dereham—25l shares	15	—	13½
Manchester and Leeds—100l shares	82	117	117
Manchester and Birmingham—40l shares	40	85	78
Manchester, Buxton, and Matlock—20l shares	42s	1 pm.	⅞ pm.
Manchester and Southampton	2	1½	1½
Midland	Stock	140½	148½
Ditto Birmingham and Derby	Stock	—	115
Newcastle and Berwick—25l shares	10	28½	27½
Newcastle and Carlisle—100l shares	100	—	—
Newcastle and Darlington Junction—25l shares	25	43½	42½
Ditto New (Brandling)—25l shares	20	—	—
Newark, Sheffield, and Boston—25l shares	2½	—	¼
Norfolk	20	27¾	26½
North British—25l shares	17½	39½	38½
Northern and Eastern—50l shares	45	—	—
North Kent and Direct Dover—50l shares	2½	1½	1½
North Staffordshire—20l shares	42s	3½ pm.	3½ pm.
Oxford, Worcester, and Wolverhampton	12½	8	8
Portsmouth Direct—50l shares	3½	5½	5½
Preston and Wyre—50l shares	50	35½	34½
Richmond—20l shares	5	18½	18½
Scottish Central—25l shares	7½	—	19½
Scottish Midland—25l shares	10	7	—
Sheffield and Manchester—100l shares	100	—	—
Shrewsbury and Birmingham	2½	3	3
South Devon—50l shares	25	—	32
South Eastern and Dover	Av. 33l 2s 4d	44½	42½
South Midland—20l shares	42s	⅛ pm.	⅛ pm.
South Wales—50l shares	5	3½	4
Vale of Neath	2	1½	1½
Waterford and Kilkenny	8	3	2½
Welsh Midland	2½	1	1
West Riding Union	42	9½	2½ pm.
Wilts, Somerset, and Weymouth—50l shares	10	5	5½
York and Carlisle	2½	½	½
York and North Midland—50l shares	50	98	97
Ditto Selby—50l shares	30	75	72½
FOREIGN RAILWAYS.			
Boulogne and Amiens—20l shares	10	12½	12¾
Bordeaux and Toulouse and Cette (Mackenzie)—20l shares	2	1½	1½
Bordeaux, Toulouse, and Cette (Espalete)—20l. shares	2	1½	1½
Central of Spain—20l shares	2	—	—
Dutch Rhenish—20l shares	5	6½	6½
East Indian	½	½	½
Great Northern of France (constituted)	5	12¾	12¾
Great Western Bengal	½	—	—
Jamaica and South Midland Junction—20l shares	1	½	—
Louvaine and Jemappe—20l shares	4	—	—
Lyons and Avignon—20l shares	2	—	—
Luxembourg	4	1½	1½
Namur and Liege—20l shares	4	3	2½
Orleans and Vierzon—20l shares	10	14½	14½
Orleans and Bordeaux—20l shares	6	8	8
Paris and St. Quentin—20l per share	2	—	—
Paris and Orleans—20l shares	20	—	—
Paris and Rouen—20l shares	20	37½	—
Rouen and Havre—20l shares	18	—	27
Sambre and Meuse—20l shares	6	4	4½
Strasburg and Basle—14l shares	14	—	—
West Flanders	4	3½	4½

* Prices obtained from country brokers—no business doing in the London market.

RAILWAY TRAFFIC RETURNS.

Name of Railway.	Lgth. Rway.	Present actual cost.	Last Div.	*Traffic Returns.* 1846	1845
Arbroath and Forfar	15	£142,900	3 *p.c.*	£299 0 0	£239
Chester and Birkenhead	15	589,362	2½	736 0 5	715
Dublin and Drogheda	32	631,258	3½	934 18 1	930
Dublin and Kingstown	6	349,736	9	1142 14 9	1129
Dundee and Arbroath	17	153,598	6	417 4 10	378
Durham and Sunderland	19	302,118	2	607 6 8	400
E. Counties & North. & East.	124½	4,090,328	5	8984 18 9	6248
Eastern Union	—	—	—	398 0 0	—
Edinburgh and Glasgow	46	1,686,226	6	4735 7 3	3221
Glasgow, Paisley, and Ayr	51	1,104,773	7	2261 10 6	2002
Glasgow, Paisley, & Greenock	23	806,134	2	1241 14 0	1228
Gravesend and Rochester	7	82,828	—	339 11 7	283
Great North of England	45	1,296,196	6	—	—
Great Western	245½	8,179,980	8	20453 5 0	20032
Hartlepool	—	—	—	902 1 10	589
London and North Western	440½	15,047,301	10	46284 11 8	20805
London and Blackwall	4	1,078,761	1½	1496 1 1	1224
London & Brighton & South Coast	113	3,496,265	5	9830 13 11	6652
London and South-Western	100	2,620,724	10½	8181 18 3½	8864
Manchester and Birmingham	85	2,197,585	6½	—	4216
Manchester & Leeds	61	3,372,240	8	7784 16 6	7654
Manchester, Bolton, & Bury	10	842,725	5½	1239 16 7½	1022
Midland Company	259½	8,831,195	7	20902 11 5	17630
Newcastle and Carlisle	65	1,137,385	5	2227 5 11	1798
Newcastle and Darlington	22½	1,272,031	9	3437 10 4	2948
Newcastle and North Shields	7	316,869	5	540 0 0	568
Norfolk	59	573,818	5	1575 6 11	—
North British	58½	—	—	2127 8 3	—
Preston and Wyre	22	432,014	2½	1419 15 9	848
Sheffield and Manchester	41½	1,313,225	5	1931 10 5	1305
South Devon	15	520,942	—	625 15 4	—
South-Eastern and Dover	137½	4,284,924	3½	10168 4 3	8246
Taff Vale	30	648,348	5	1247 19 1	1202
Ulster	25	358,353	5½	748 14 3	593
York and North Midland	84	2,334,599	10	7478 4 5	6330
Northern of France	260	—	4	6647 0 0	—
Orleans and Bordeaux	72	599,040	4	2648 0 0	—
Paris and Orleans	82	2,082,916	9½	7403 0 0	6632
Paris and Rouen	85	1,995,306	8	8129 0 0	7407

NEW PATENTS AND REGISTRATIONS.

Extracts from the Mechanics' Magazine Weekly List of English Patents:—

W. Aitken, gent., Aberdeen, for certain improvements in two and four-wheeled carriages.

J. Gray, Red Cross-street, Southwark, machinist, for improvements in gas meters.

G. Remington, Park-street, Westminster, civil engineer, for certain improvements in locomotives, parts of which improvements are applicable to marine & stationary engines.

S. H. Hamilton, gent., Paris, for improvements in machinery or apparatus for dredging or excavating.

J. C. Robertson, Fleet-street, London, civil engineer, for an improved method of constructing boats, ships, and vessels of wood. (Being a communication.)

Cameron's Coalbrook Steam-Coal, and Swansea and Loughor Railway.—The committee to whom this bill has been referred—consisting of Lord Radnor (chairman), Lord Falkland, Lord Ducie, Lord Camoys, and Lord Fostescue—met yesterday morning, when, after hearing the evidence, they passed the preamble of the bill. The clauses were agreed to, and the bill was ordered to be reported.

Railway Accidents.—By a Parliamentary paper, just issued, it appears that from the 1st of January last to the 20th of July, of accidents on railways, 73 persons were killed and 84 injured.

PRICES OF MINING SHARES.

Shares.	Company.	Paid.	Price.
	BRITISH MINES.		
1024	Alfred Consols	3½	30
235	Andrew and Nanglles	25½	25
1000	Barristown	4½	30
4000	Bedford	2½	3
128	Besore Lead Mine	—	20
320	Birch Tor Tin Mine	10½	12
8000	Blaenavon	50	40
256	Bodwannick	3	5
100	Botallack	175	250
120	Brewer	—	5
10000	British Iron, New, regis.	10	19
—	Ditto ditto, scrip	10	19
128	Budnick Consols	—	30
100	Bwlch Cwmerfin	20	200
1000	Callington	19	20
256	Caradon Consols	45	35
256	Caradon Copper Mine	9½	1
256	Caradon Mines	15	28
256	Caradon United	24	32
256	Caradon Wh. Hooper	12	6
1000	Carn Brea	15	100
114	Charlestown	—	200
1900	Combmartin	5½	4½
1000	Comblawn	2½	5
128	Comfort	—	40
5000	Con. Tretoil Mining Ass.	3½	1½
128	Condurrow	36	60
2560	Cook's Kitchen	—	6
1000	Copper Bottom	1	5
3200	Cornubian Lead Co.	3	—
1024	Cosheen	4½	30
240	Craddock Moor	9	20
128	Creeg Braws	120	120
500	Cubert Mine	11	30
7100	Derwent	8½	5
1024	Devon & Courtney Con.	4	5½
1000	Dhurode	2	5
186	Dolcoath	—	80
10000	Durham County Coal	45	9
256	East Alvenney	3	16
128	East Pool	5	35
9000	East Tamar Consols	1½	3⅝
—	East Wheal Albert	1	3
94	East Wheal Crofty	—	300
256	East Wheal Kitty	½	¼
128	East Wheal Rose	50	1100
123	East Wheal Seton	2½	15
512	Fowey Consols	—	40
20000	Galvanised Iron Co.	10	10
10000	Gen. Mining Co. for Irel.	½	¼
1000	Godolphin	—	35
256	Gonamena	19	90
128	Gover	23	200
241½	Grambler & St. Aubyn	—	25
100	Great Consols	1000	400
256	Great Calestick Moors	6½	13
2560	Great Mitchel Consols	—	2
256	Great Resugga Moor	1	8
512	Gt. Wh. Rough Tor Con.	1	50
100	Grogwinion	5	20
1000	Gunnis Lake	1½	3
1000	Hanson	5	1
1000	Harrowbarrow Old Mine	4½	4
1000	Harrowbarrow Consols	2	1½
800	Hawkmoor	3	3
6000	Heignston Down Con.	1	2
256	Heredsfoot	14	12
10000	Hibernian	12½	1
—	Hobb's Hill	—	8
1000	Holmbush	18	8½
256	Ivy Tor	1½	2½
827	Kirkcudbrightshire	1½	2½
2048	Lamherooe Wh. Maria	7	7½
128	Lanarth & Penstruthal	—	150
2048	Lanivet Consols	2	4½
200	Larkholes	1	3
160	Levant	—	90
1000	Lewis	12	1½
1280	Llancynfelin	5	15
128	Ludcott	3	3
2800	Marke Valley	10	3½
5000	Mendip Hills	1½	1½
20000	Mining Co. of Ireland	7	12
200	Nanterrow Consols	10½	5
128	New East Crowndale	7½	2
128	North Fowey Consols	10	25
100	North Pool	11	45
70	North Roskear	10½	400
256	North Treburget	2½	4
100	North United	41	20
256	North Wh. Leisure	1½	6
128	North Wh. Providence	2½	10
256	North Wheal Rose	26½	15
15000	Northern Coal Co.	23	2
600	Old Delabole Slate Co.	25	45
128	Par Consols	—	900
256	Penhallow Moor	15	5
6000	Pennant	1	2
100	Penrhiw	30	65
128	Pen-y-Cefn Mine	50	55
1280	Perran St. George Un.	13	20
128	Perran Wh. Virgin	—	45
512	Plymouth Wh. Yeoland	1½	3½
2048	Prince Edward	1½	1½
10000	Rhymney Iron	50	25
256	Rose Consols	10	7
1000	Rosewall Hill	1	3½
2500	Silver Valley	3	2½
256	Sourton Consols	3½	5
128	South Caradon	10	375
2000	South Dolcoath	2	—
256	Sth. Friendsh. Wh. Ann	7½	25
260	South St. George	9½	1
200	South Harvannah	23	26
800	South Towan	10	1½
256	South Trelawney	8½	5
128	South Yeoland	16½	20
128	South Wheal Basset	—	145
124	South Wh. Francis	—	90
	BRITISH MINES—*continued.*		
256	South Wh. Hope	—	5
1000	South Wh. Maria	2½	4½
256	South Wheal Rose	11½	3
10000	Southern & Western, Irish	1	2
256	St. Austell Consols	7	20
94	St. Ives Consols	—	600
1000	Stray Park	43	22
9600	Tamar Consols	3	4
6000	Tincroft	7	9
256	Ting Tang	67	10
128	Tokenbury	124	30
—	Trehane	—	18
1024	Trelawney Consols	1½	1½
5000	Treleigh Consols	6	4½
256	Trenow Consols	—	150
96	Tresavean	10	250
120	Trethellan	5	36
120	Treviskey and Barrier	61	130
256	Trewallack	—	22
128	Trewellard	12	25½
4000	United Hills	5	3
100	United Mines	300	800
128	West Basset	45	15
256	West Caradon	20	280
128	West Cargoll	2	15
512	West Fowey Consols	40	35
—	West Kekewich Consols	—	3½
256	Wheal Kekewich	4	8
256	West Providence	—	10
200	West Seton	—	46
120	West Trethellan	5	32
256	West United Hills	2½	3½
256	West Wh. Friendship	5	10
3845	West Wheal Jewel	11	2
2560	West Wh. Maria	½	2½
2560	West Wh. Mitchell	—	2
256	West Wheal Shepherd.	—	10
256	West Wheal Tolgus	21½	14
256	West Wheal Treasury	12	8
240	Westerlake	3	3
6000	Wicklow Copper	5	16½
—	Wheal Agar	—	50
256	Wheal Albert	10	8
128	Wheal Acland	13	2
256	Wheal Allen	½	4
368	Wheal Anderton	10½	11½
128	Wheal Ann	—	50
256	Wheal Blencowe	—	15
256	Wheal Bian Consols	½	3
128	Wheal Catherine	5½	½
256	Wheal Cleveland	2½	5
136	Wheal Clifford	—	200
1024	Wheal Concord	5½	7
256	Wheal Fortescue	4½	12½
256	Wheal Frederick	3	20
384	Wheal Franco	22	25
256	Wheal Gill	17½	26
1000	Wheal Harriet	1	—
128	Wheal Henry	—	5
2048	Wheal Holwell	1½	1¾
109	Wheal Hope (Zennor)	23	25
256	Wheal Hope	7	1½
256	Wheal Jane	6	40
265	Wheal Kendall	11½	5
256	Wheal Louisa	4½	5
1024	Wheal Maria	1	500
4000	Wheal Martha Consols.	4	3
256	Wheal Mary Ann	5	93
1024	Wheal Mary (Calstock)	2½	1½
256	Wheal Mary Consols	25	8
256	Wheal Mexico	5	5
256	Wheal Mary Lanivet	2½	12
256	Wheal Norris	9	2
128	Wheal Penrose	—	5
128	Wheal Pollard	11½	12
128	Wheal Prospect	4	9
128	Wheal Providence	34	40
128	Wheal Reeth	1	60
256	Wheal Robins	13	½
128	Wheal Rose	40	25
256	Wheal Salusbury	13	5
512	Wheal Sarah	2½	5
99	Wheal Seton	150	825
1024	Wheal Spearne	1½	8
256	Wheal Sisters	25½	17
128	Wheal St. Cleer	21½	15
260	Wheal Trelawney	7½	118
256	Wheal Trevenna	3½	½
256	Wheal Trewennan	—	10
128	Wheal Venland	12½	12
256	Wheal Victoria	2	6
127	Wheal Virgin	—	50*
1024	Wheal Walter	3	6½
256	Wheal Williams	2	20
	FOREIGN MINES.		
5000	Alten Mining Company	14½	2½
15000	Asturian Mining Co.	6	3
10000	Anglo-Mexican Co.	100	3
3374	Ditto Subscription	25	4
2000	Bolanos	150	4½
12000	Ditto Scrip	15	5
10000	Brazilian Imperial	20	4
12000	Cobre Copper Co.	40	23
8500	Colombian Co. regis.	55	} 4½
5000	Ditto Scrip	—	}
10000	Copiapo Mining Co	14	2½
20000	General Mining Ass'n.	20	18
5051	Mexican Company	59	5
12000	Mocaubas & Cocaes	25	8½
29320	{ Rl. del Monte, regis. / Ditto unregistered }	28½	av. 3½
	Ditto Red Debentures	—	19
	Ditto Black ditto	—	17
	Ditto Loan Notes	150	117
7000	Royal Santiago	10	16
2000	Pachuca Mines	3	3½
11000	St. John del Rey	15	10½
43174	United Mexican	28½	3½

*** *We should feel greatly obliged by agents, or others interested, furnishing us with such corrections for our Share List as we may not have received through our usual channels of information—our object being, to present as accurate a list of prices as can be obtained—to procure which, we solicit the aid of correspondents in general.*

LATEST CURRENT PRICES OF METALS.

LONDON, AUGUST 21, 1845.

	£	s.	£	s.	d.
Iron—Bar *a*..Wales..*ton*	0	0—	8	10	0
" ..London	0	0—	9	10	0
Nail rods "	0	0—	10	10	0
Hoop(Staf.) "	0	0—	11	10	0
Sheet " "	13	0—	13	10	0
Bars " "	0	0—	10	10	0
Rails, average	0	0—	9	10	0
Welsh cold-blast foundry pig	4	5—	5	0	0
Scotch pig *b*, Clyde	3	13—	3	16	0
Russian, CCND *c*	0	0—	—		
" PSI	15	0—	15	10	0
" Gourieff	0	0—	14	10	0
" Archangel	0	0—	13	12	6
Swedish *d*, on the spot	11	0—	11	10	0
" Steel, fagt.	0	0—	15	0	0
" " kegse	14	0—	14	10	0
Copper—Tile *f*	0	0—	92	0	0
Tough cake	0	0—	93	0	0
Best selected	0	0—	96	0	0
Copper—Ordin. sheets, *lb.*	0	0—	0	0	10½
" bottoms	0	0—	0	0	11½
Tin—Com. blocks *g*..*cwt.*	0	0—	4	12	0
" bars	0	0—	4	13	6
Refined	0	0—	4	15	0
Straits *h*	4	11—	4	12	0
Banca	0	0—	4	14	0
Tin-Plates—Ch., IC *i*, *box*	1	5—	1	10	0
" IX	1	11—	1	16	0
Coke, IC	1	4 6	1	5	0
" IX	1	10 6	1	11	0
Lead—Sheet *k*..*ton*	0	0—	19	15	0
Pig, refined	0	0—	19	0	0
" common	0	0—	18	10	0
" Spanish, in bd.	17	5—	17	10	0
" American	17	10—	17	15	0
Spelter—(Cake) *l*	0	0—	19	0	0
Zinc—(Sheet) *m* export.*	0	0—	28	0	0
Quicksilver *n*..*lb.*	0	0—	0	4	6
Refined Metal..*ton*	4	15—	5	0	0

a Discount 2½ per cent. *b* Net cash. *c* Discount 2½ per cent. *d* Ditto *e* In kegs ½ and ⅝-inch. *f* Discount 3 per cent. *g* Ditto 2½ per cent. *h* Net cash. in bond. *i* Discount 3 per cent. *k* Ditto 2½ per cent. *l* Net cash. *m* Discount 1½ per cent. *n* Discount 1½ per cent. * For home use it is 32l. per ton.

[*From a Correspondent.*]

The market for bar and rail iron has been very firm during the week, and large orders taken for both at full prices, with every prospect of a further advance. Scotch pig iron has been rather dull within the last few days, owing to some small parcels being forced on the market, but the makers are firm, and refuse to sell under 80s., less 2½ per cent. discount, free on board at Glasgow. Welsh and Staffordshire pigs are in good demand at quotations. Swedish iron and steel are dull of sale. English copper and tin are firm at quotations. In Straits or Banca very little done during the week.—English pig lead is without alteration. For American as high as 17l. 15s. has been paid during the week. In Spanish nothing doing.—Spelter during the week, about 100 tons have been sold at 19l., and 50 tons at 18l. 15s., but since the last purchase one holder refused 19l.

GLASGOW PIG-IRON TRADE.

TO THE EDITOR OF THE MINING JOURNAL.

Sir,—Our pig-iron market is just now in rather a healthy state—the stock in the yard, having for some time been, and is still, diminishing, and the foreign demand promising. The principal markets are sold out, for at least the next two months; and for delivery after that period, are asking 80s. The principal holders are firm at 77s. 6d. to 80s., according to brand, for No. 1. We quote the price at which there were transactions done at to-day:—72s. for No. 3; 75s. for 3-5ths No 1. and 2-5ths No. 3; and 77s. 6d. for No. 1—cash, free on board.—*Glasgow, Aug.* 19.

DOUGLAS & HILL.

COAL MARKET, LONDON.

PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.

MONDAY.—Ships at market, 69; sold, 56; unsold, 13.

WEDNESDAY.—Buddle's West Hartley 15—Chester Main 13 6—Holywell 15—New Tanfield 13—Original Tanfield 13—Old Pontop 12 3—Ord's Redheugh 13—Tanfield Moor 15—West Wylam 14—Walls End Gosforth 14 3—Hilda 14 3—Killingworth 14—Walker 14 3—Wharncliffe 14 3—Eden Main 14 3—Braddyll's Hetton 15 6—Haswell 15 9—Hetton 15 3—Lambton 15—Russell's Hetton 15—Shotton 14 9—Stewart's 15 3—Hartlepool 15 3—Heugh Hall 14 6—Adelaide Tees 15—Barrett 14 3—Seymour Tees 14 6—Tees 15 6—Garsfield Coke 22—Cowpen Hartley 15 6—Llangennech 22 6—Sidney's Hartley 15 6.—Ships at market 57.

FRIDAY.—Adair's Main 13 6—Charlotte 14—Carr's Hartley 16—Chester Main 13 9—Dean's Primrose 13—Hasting's Hartley 15 6—Holywell Main 15—New Tanfield 13—North Percy Hartley 14 9—Ord's Redheugh 13—Tanfield Moor 15—Townley 14—West Wylam 14 3—Wall's End Bell Robson 13 9—Hebburn 13 9—Hilda 14 3—Riddell's 14 3—Walker 14 3—Wharncliffe 14 3—Eden Main 14 3—Braddyll's Hetton 15 3—East Hetton 14 3—Haswell 15 9—Hetton 15 3—Lambton 15—Russell's Hetton 15—Shotton 15—Stewart's 15 3—Wearmouth 14 6—Heugh Hall 14 6—Kelloe 15 3—Plummer 15—Adelaide Tees 15—Seymour Tees 14 6—Cowpen Hartley 16—Derwentwater Hartley 15.—Ships at market, 72; sold, 59; unsold, 13.

South Wheal Francis Mining Company.—At a meeting of adventurers, held on the mine, on the 17th inst., the accounts were made up to the end of June, when there proved to be a profit on the two months of 165l. 12s. 7d., with a balance in hand from the former account of 13l. 0s. 7d.—making a balance in favour of the adventurers of 178l. 13s. 2d. At the next meeting, in October, the agents, it is said, calculate that the profit, in addition to the above, will amount to 1400l. Thus the adventurers, after having prosecuted this mine in a most spirited manner, and after having expended 10,000l., are likely to realise considerable profit. The agents' report of the present and future prospects, our correspondent states, were most encouraging.

PRESENT POSITION OF THE MINING INTEREST.

[From the *Morning Post.*]

Having been led, by a statement in the *Mining Journal*, to make a few comments on the results attending some mining undertakings, both British and foreign, we are now induced, at the request of several correspondents, to take a general view of the subject, based on the list and quotations of Saturday last. The whole number of companies or associations quoted in the *Mining Journal* is 208, of which we have taken 165—in fact, all where the number of shares and paid-up capital are stated, to enable us to draw conclusions. We have also classed the various undertakings, so as to show the amount invested, and the issue of the adventure, whether in search of copper, lead, tin, or ores jointly.

Copper.—To begin with copper, it appears that the number of mines at work is 110, represented by 129,551 shares, on which the deposit or calls paid vary from 5s. to 1000l., and average 7½l. per share. Of these associations 67 are at a premium, 5 at par, and 38 at a discount. The capital invested is 974,220l., and the market value of the same, being 1,874,839l., the increase consequently is 900,619l., after allowing for the loss of 361,986l. sustained, collectively, by the before mentioned 38 undertakings. The highest premium is 675l., and the lowest 10s. per share. The smallest discount is 10s., and the largest 600l. per share.

Lead.—Proceeding to the subject of lead, one of the most important connected with the metals, inasmuch as its consumption in this country is so much greater than copper—we believe its proportion is as 7 to 10—we find there are 39 companies or associations formed for bringing this article to market. Of these 22 are at a premium, 3 at par, and 14 at a discount. These undertakings are divided into 54,852 shares, varying from 5s. to 50l. per share, and averaging about 4½l. The capital invested is 245,686l., and the value in the market being 515,432l., it follows that there is an increase of 269,746l., after allowing for the loss on the 14 companies, of 39,471l., being equal to rather more than 100 per cent. on the money embarked. The lowest premium is 1l., and the highest 1050l. per share. The smallest discount is 10s., and the greatest 15l. per share.

Tin.—There are seven companies enumerated for the procuration of tin, divided into 8876 shares, varying from 1l. to 175l. each, and averaging 8 1-16l. All are at a premium, with the exception of one (South Towan), which is quoted at 8l. 10s. dis. The invested capital is 77,508l.; and the market value being 106,436l., it follows that there is an increase of 28,928l., after allowing for the decrease of 6800l. sustained by the South Towan Company. The lowest premium is 1l. 5s., and the highest 30l. per share.

Tin and Copper.—There are three companies for tin and copper combined, divided into 3735 shares, of 3l., 15l., and 25l. 10s. each. The invested capital is 28,492l.; and the market value being 124,475l., there is necessarily an increase of 95,983l., after allowing for a falling off of 1250l. in respect of the Silver Valley Company. Of the other two associations, the lowest priced share bears a premium of 95l., or 630 per cent., while the higher priced share is at 9l. 10s., or 60 per cent. premium.

Tin, Copper, and Lead.—For the procuration of tin, copper, and lead collectively, there are two companies only—the Harrowbarrow Old Mine, and the Harrowbarrow Consols. Each are divided into 1000 parts or shares, on which 4l. 10s. have been paid with respect to the former, and 2l. per share with respect to the latter. The first named is at a discount of 10s., and the last at 15s. per share; so that the depreciation of capital is, together, 1250l., the amount embarked being 6500l., and the market value 5250l.

Iron.—The details of only four companies, in respect to iron, are given in the *Mining Journal*. They are divided into 58,000 shares, of 10l. and 50l. each. The invested capital is 1,300,000l.; and the market value being 1,150,000l., there is consequently a depreciation of 150,000l., after giving credit for an increase of the British Iron Company of 180,000l. The highest premium is 9l., and the lowest discount 25l. per share.

It has been a commonly received opinion, that the result attending mining enterprise, has been prejudicial to those engaged. That such remarks may be justly applied to undertakings in foreign countries, we do not deny; but the foregoing statements show that it is a fallacy, as a general principle, when applied to home associations. We are ready to admit, that money to a considerable amount has been lost in this country, through the want of proper regulations, and incapability or ruthlessness on the part of those employed to superintend. Mining affairs, however, are now totally changed. The loose system of administration, which has distinguished some mining companies, has given place to an organised and defined principle of control and limitation of responsibility, by a proper and rigid observance of the provisions of the "cost-book;" while the improvement, in what may be termed mining engineering, is even still more marked. The agents who were employed formerly, who, with some few exceptions, were mere working miners, ignorant of the great principles of geology, and the bearings of the different stratifications of the earth, have given place to a totally different class of persons—to men combining education in all the branches of metallurgical knowledge with practical experience, by which mineral surveying is now reduced to a science. In fact, it is no longer the hap-hazard adventure of our forefathers, but a matter reduced to so near a certainty, that prudent men invest capital with a fair prospect of remunerative returns. It was also the general custom formerly, to divide the parts or shares into a limited number, with heavy calls—the consequence of which was, that, in times of money pressure, persons who held many shares were compelled, not infrequently, to realise on them at any sacrifice, which not only entailed severe losses to those so situated, but depreciated the value of the property of the mine itself, by the forced sale on the market. The modern practice, however, is to divide the associations into a large number of parts, and to make small calls—the beneficial effect of which was fully shown, during the late railway share panic, at the Stock Exchange; for while there were no purchasers for this description of investment, the mining share market was not in any way deranged, but, on the contrary, showed comparatively much animation. The statements now given, furnish proof that the shares on which the smallest amount has been paid, command generally, always relatively, the highest premium; while, in the reverse sense, the shares on which large sums have been paid up, have sustained the heaviest depreciation; but this is a principle so well known in connection with all speculative undertakings, that it scarcely requires remark. The summary, with respect to the annexed tables, shows that, of the total number of associations—viz.: 165—there are 98 at a premium, many of considerable amount, 9 at par, and 58 at a discount; the whole being divided into 257,014 shares. The capital embarked collectively is 2,632,406l.; and the market value being 3,776,432l., after allowing for a depreciation which 58 companies show, amounting to 740,757l., it follows, that the aggregate increase is 1,144,026l., or equal to 45 per cent. on the capital embarked. In a former article, we drew attention to the fact, that those who had advanced their money to carry on mining works in foreign countries, to the detriment of British interests, were generally total losers, and urged the impropriety in a national, as well as in an individual, point of view, of such proceeding; but we certainly were not prepared to find, that the success which had attended, in the aggregate, home undertakings, for the procuration of the same articles of commerce, had been so signal as is now demonstrated, or that the confutation of the general opinion with reference to mining adventures was so complete. We are glad to find the reality to be as represented; for it is another, and very convincing proof, that where British capital is embarked in home enterprise, under proper and economical management, the result is generally beneficial, in some instances to an extraordinary degree to those concerned. It is only a national spirit, which ought to be carried out in every instance of trade and commerce. There is not one article necessary for the purposes of this empire, which cannot be supplied from within our own shores; and, consequently, it is a just reward to those who suffer in endeavouring to impoverish their own country, and check native exertions, by the encouragement of foreign labour.

SYNOPSIS OF THE BRITISH MINING INTEREST.

COPPER COMPANIES.	No. of Shares.	Paid per Share.	Invested Capital.	Present Price.	Market Value of Capital.	Increased Value Capital.	Decreased Value.	Premium per Share.	Discount per Share.
Alfred Consols	1024	3½	3200	40	40960	37760	—	36½	—
Bedford	4000	2⅓	9333⅓	3½	14000	4666⅔	—	1 1-6	—
Bodwannick	256	3	768	5	1280	512	—	2	—
Caradon Consols	256	45	11520	35	8960	—	2569	—	10
Ditto Copper Mine	256	9½	2432	4	1024	—	1408	—	5½
Ditto Mines	256	15	3840	30	7680	3840	—	15	—
Ditto Wheal Hooper	256	12	3072	6	1536	—	1536	—	6
Consolidated Tretoil Mining Association	5000	3¾	18750	1¼	6250	—	12500	—	2½
Condurrow	128	36	4608	65	8320	3712	—	29	—
Copper Bottom	1000	1	1000	5	5000	4000	—	4	—
Cosheen	1024	4¼	4224	30	30720	26496	—	25¾	—
Craddock Moor	240	9	2160	22	5280	3120	—	13	—
Creeg Braws	128	120	15360	120	15360	par	par	par	par
Cubert	500	11	5500	30	15000	9500	—	19	—
Devon and Courtney Consols	1024	4	4096	5½	5632	1536	—	1½	—
Dhurode	1000	2	2000	5	5000	3000	—	3	—
East Pool	128	5	640	35	4480	3840	—	30	—
East Wheal Kitty	256	¼	64	¼	64	par	par	par	par
East Wheal Seton	123	2½	307½	15	1845	1537½	—	12½	—
General Mining Company for Ireland	10000	⅛	1250	¾	7500	6250	—	⅛	—
Gonomena	256	19½	4864	110	28160	23296	—	91	—
Gower	128	23	2944	200	25600	22635	—	177	—
Great Consols	100	1000	100000	400	40000	—	60000	—	600
Gunnis Lake	1000	1½	1500	3	3000	1500	—	1½	—
Hanson	1000	5	5000	1	1000	—	4000	—	4
Hawkmoor	800	3	2400	3	2400	par	par	par	par
Helgnston Down Consols	6000	1	6000	2	12000	6000	—	1	—
Hibernian	10000	12½	122500	1	10000	—	112500	—	11½
Holmbush	1000	18	18000	10½	10500	—	7500	—	7½
Ivy Tor	256	1½	384	2½	640	256	—	1	—
Lamheroe Wheal Maria	2048	7	14336	7½	1536	1024	—	½	—
Lanivet Consols	2048	2	4096	4½	9216	5120	—	2½	—
Lewis	1000	12	12000	1½	1500	—	10500	—	10½
Ludcot	128	3	384	3	384	par	par	par	par
Marke Valley	2800	10	28000	3¾	10500	—	17500	—	6¼
Mining Company of Ireland	20000	7	140000	12½	242500	102500	—	5½	6½
Nanterrow Consols	200	10½	2100	5	1000	—	1100	—	5½
New East Crowndale	128	7½	960	2	256	—	704	—	5½
North Fowey Consols	128	10	1280	25	3200	1920	—	15	—
North Pool	100	11	1100	45	4500	400	—	34	—
North Roskear	70	10½	735	400	28000	27265	—	389½	—
North United	100	41	4100	20	2000	—	2160	—	21
North Wheal Leisure	256	1½	384	6	1536	—	—	4½	—
North Wheal Providence	128	2½	320	10	1280	—	—	7½	—
Plymouth Wheal Yeoland	512	1½	768	3½	1792	1024	—	2	—
Sourton Consols	256	3½	896	5	1280	384	—	1	—
South Caradon	128	10	1280	380	48640	47360	—	370	—
South Friendship Wheal Anne	256	7½	1920	25	6400	4480	—	17½	—
South Ycoland	128	16½	2112	20	2560	448	750	—	⅝
South Wheal Maria	1000	2½	2750	2	2000	—	—	—	—
Southern and Western, Irish	10000	1	10000	2	20000	10000	—	1	—
St. Austell Consols	256	7	1792	20	5120	3328	—	13	—
Stray Park	1000	43	43000	22	22000	—	21000	—	21
Ting-Tang	256	67	17152	12	3072	—	14080	—	55
Tokenbury	128	124	15872	33	4224	—	11648	—	91
Treleigh Consols	5000	6	30000	4¼	20633	—	9367	—	1½
Tresavean	96	10	960	250	24000	23040	—	240	—
Trethellan	120	5	600	40	4800	4200	—	35	—
Treviskey and Barrier	120	61	7320	137	15600	8280	—	69	—
Trewellard	128	12	1536	25¼	3264	1728	—	13½	—
United Hills	4000	5	20000	4	6000	—	4000	—	1
United Mines	100	390	30000	803	80000	50000	—	500	—
West Basset	128	35	5760	15	1920	—	3840	—	30
West Caradon	256	23	5120	300	76800	71680	—	280	—
West Cargoll	128	2	256	15	4920	1664	—	13	—
West Fowey Consols	512	40	20480	35	17920	—	2560	—	5
Wheal Kekewich	256	4	1024	8	2048	1024	—	4	—
West United Hills	256	2¾	704	3½	896	192	—	¾	—
West Wheal Friendship	256	5	1280	10	2560	1280	—	5	—
West Wheal Jewel	3845	11	42295	1½	6248½	—	36047½	—	9⅝
West Wheal Maria	2560	½	1280	2¾	7040	5760	—	2¾	—
West Wheal Tolgus	256	21½	5440	14	3584	—	1856	—	7½
West Wheal Treasure	256	12	3072	8	2048	—	1024	—	4
Westerlake	240	3	720	3	720	par	par	par	par
Wicklow Copper	6000	5	30000	16½	99000	69000	—	11½	—
Wheal Albert	256	10	2560	8	2048	—	512	—	—
Wheal Anderton	368	10⅞	4002	11½	4370	368	—	1	—
Wheal Bian Consols	256	¼	64	3	768	704	—	2¾	—
Wheal Cleveland	256	2½	640	5	1280	640	—	2½	—
Wheal Fortescue	256	4½	1152	12½	3200	2048	—	8	—
Wheal Frederick	556	3	761	20	5120	4352	—	17	—
Wheal Franco	384	22	8448	25	9600	1152	—	3	—
Wheal Gill	256	17½	4480	27	6912	2452	—	9½	—
Wheal Hope	256	7	1792	1½	384	—	1408	—	5½
Wheal Kendal	265	111	22814½	5	1325	—	16564½	—	64
Wheal Maria	1024	1	1024	500	512000	510976	—	499	—
Wheal Martha Consols	4000	4	16000	3	12000	—	4000	—	1
Wheal Mary Ann	256	5	1280	98	25088	23808	—	93	—
Wheal Mary (Calstock)	1024	2½	2560	1¾	1792	—	768	—	¼
Wheal Mary Consols	256	25	6400	8	2048	—	4352	—	17
Wheal Mary Lanivet	256	2½	640	12	3072	2432	—	9½	—
Wheal Norris	256	9	2304	8	2048	—	256	—	¼
Wheal Pollard	128	11½	1472	12	1536	64	—	½	—
Wheal Prospect	128	4	512	9	1152	640	—	5	—
Wheal Robins	256	13	3328	2	512	—	2816	—	11
Wheal Salisbury	256	13	3328	5	1280	—	2048	—	8
Wheal Sarah	512	2½	1152	5	2560	1408	—	2½	—
Wheal Seton	99	150	14850	825	81675	60825	—	675	—
Wheal Spearne	1024	1¼	1280	8	8192	6912	—	6¾	—
Wheal Sisters	256	25¾	6592	20	5120	—	1472	—	5¾
Wheal St. Cleer	128	21½	2752	15	1920	—	832	—	6½
Wheal Trevenna	256	3½	896	4	1024	128	—	½	—
Wheal Venland	128	12½	1600	12	1536	—	64	—	½
Wheal Victoria	256	2	512	6	1536	1024	—	4	—
Wheal Williams	256	2	512	20	5120	4608	—	18	—
West Trethellan	120	5	600	32	3840	3240	—	27	—
Wheal Allen	256	¼	128	4	1024	896	—	3½	—
Wheal Jane	256	6	1536	40	10240	8704	—	34	—
Wheal Kendal	265	11½	3047½	5	1325	—	1722½	—	6½
Wheal Reeth	128	1	128	60	7680	7552	—	—	59
Totals	129551		974220		1874839	1262603	361986½		

LEAD COMPANIES.	Shares.	Paid.	Capital.	Price.	Market Value.	Increase.	Decrease.	Premium.	Discount.
Barristown	1000	4½	4500	30	30000	25500	—	25	½
Bwlch Cwmferin	100	20	2000	200	20000	18000	—	180	—
Callington	1000	19	19000	20	20000	1000	—	1	—
Combmartin	1900	5½	10450	4½	8550	—	1900	—	1
Derwent	7100	8½	60350	5½	39050	—	21300	—	3
East Tamar Consols	9000	1½	11250	3	27000	15750	—	—	1⅝
East Wheal Rose	128	50	6400	1100	140800	134400	—	1050	—
Grogwinion	100	5	500	20	2000	1500	—	15	—
Herodsfoot	256	14	3584	11½	2944	—	640	—	2½
Kirkcudbrightshire	827	1½	1447	1½	1447	par	par	par	par
Llancynfelin	1280	5	6400	15	19200	12800	—	10	—
Mendip Hills	5000	1½	7500	1	5000	—	2500	—	½
North Treburget	256	2½	640	4	1034	384	—	1½	—
North Wheal Rose	256	26½	6720	20	5120	—	1600	—	6¼
Penhallow Moor	256	15	3840	5	1280	—	2560	—	10
Penrhiw	100	30	3000	65	6500	3500	—	35	—
Pen-y-Cefn	128	50	6400	55	7040	640	—	5	—
Perran St. George United	1280	13	16640	20	25600	8960	—	7	—
Pennant	6000	1	6000	2	12000	6000	—	1	—
Rose Consols	256	10	2560	7	1792	—	768	—	3
South St. George	260	9½	2567	1	260	—	2307	—	8⅛
South Trelawney	256	8½	2176	6	1536	—	640	—	2½
South Wheal Rose	256	11½	2880	3	768	—	2112	—	8¼
Tuckermarth	1024	¼	256	2	2048	1792	—	1½	—
Tamar Consols	9600	3	28800	5	48000	19200	—	2	—
Trelawney Consols	1024	12	1536	12	1536	par	par	par	par
Wheal Acland	128	13	1664	10	1280	—	384	—	3
Wheal Boscastle	256	3½	896	18	4608	3712	—	14½	—
Wheal Catherine	128	5½	704	½	64	—	640	—	4
Wheal Concord	1024	5¼	5376	10	10240	4864	—	4¾	—
Wheal Hope (Zennor)	109	23	2507	25	2725	218	—	2	—
Wheal Mexico	256	5	1280	5	1280	par	par	par	par
Wheal Providence	128	34	4352	40	5120	768	—	6	—
Wheal Rose	128	40	5120	25	3200	—	1920	—	15
Wheal Trelawney	260	7¾	2015	115	29900	27885	—	107½	—
Wheal Walter	1024	3	3072	8	8192	5120	—	5	—
Wheal Agnes	2000	¼	500	7½	15030	14500	—	7½	—
Wheal Carpenter	512	⅜	192	3	1536	1344	—	2½	—
Wheal Grace	256	2	512	7	1792	1280	—	5	—
Totals	54852		245686		515432	309117	29471		

TIN COMPANIES.	Shares.	Paid.	Capital.	Price.	Market Value.	Increase.	Decrease.	Premium.	Discount.
Birch Tor	320	10½	3440	12	3840	400	—	1½	—
Botallack	100	175	17500	250	25000	7500	—	30	—
East Alvenney	256	3	768	16	4096	3328	—	13	—
Rosewall Hill	1000	1	1000	3½	3500	2500	—	2½	—
Larkholes	200	1	200	3	600	400	—	2	—
South Hawannah	200	23	4600	26	5200	600	—	3	—
South Towan	800	10	8000	1½	1200	—	6800	—	8½
Tincroft	6000	7	42000	10½	63000	21000	—	3½	—
Totals	8676		77508		106436	35728	6800		

TIN AND COPPER COMPANIES.	Shares.	Paid.	Capital.	Price.	Market Value.	Increase.	Decrease.	Premium.	Discount.
Andrew and Nanglies	235	25½	5992	35	8225	2232½	—	9½	—
Carn Brea	1000	15	150000	110	11000	95000	—	95	—
Silver Valley	2500	3	7500	2¼	6250	—	1250	—	½
	3735		28492		124475	97282½	1250		

IRON COMPANIES.	Shares.	Paid.	Capital.	Price.	Market Value.	Increase.	Decrease.	Premium.	Discount.
Blaenavon	8000	50	400000	40	320000	—	80000	—	10
British Iron, new registered	10000	10	100000	19	190000	90000	—	9	—
Ditto scrip	10000	10	100000	19	190000	90000	—	9	—
Galvanised Iron	20000	10	200000	10	200000	par	par	par	par
Rhymney Iron	10000	50	500000	25	250000	—	250000	—	25
	58000		1300000		1150000	180000	330000		

LAMHEROOE WHEAL MARIA (LEAD & COPPER) MINE: IN 2048 SHARES.

WHEAL CONCORD SILVER-LEAD MINE: 1024 shares.
WHEAL MARY COPPER MINE: 1024 shares.
WHEAL WALTER LEAD AND COPPER MINE: 1024 shares.
LOSTWITHIEL CONSOLS COPPER MINE: 1024 shares.
WHEAL HOLWELL COPPER MINE: 2048 shares.
PRINCE EDWARD LEAD AND COPPER MINE: 2048 shares.
ECTON (Staffordshire) LEAD AND COPPER MINES: 1024 shares.
COSHEEN (county of Cork, Ireland) COPPER MINE: 1024 shares.
ARDTULLY AND SHANEGURRY COPPER AND SILVER-LEAD MINES (county of Kerry, Ireland): 3500 shares.

The BUSINESS of the ABOVE MINES is now conducted at No. 4, KING-STREET, CHEAPSIDE, LONDON, where all INFORMATION respecting them, and the value of the shares, may be obtained, and specimens from each mine inspected, including recent ones from WHEAL CONCORD, ECTON MINES, COSHEEN, and ARDTULLY and SHANEGURRY, Dated August 22, 1846. JAMES CROFTS, Secretary.

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WANTED, a DREDGE BOAT, of 20 horses power, to be capable of dredging from 7 to 15 feet deep, and to be in good condition.—Parties having one to sell, may send the particulars to Mr. Grantham, 5, Orange-court, Liverpool.

THE ATMOSPHERIC SYSTEM—WORKING A FOUR-AND-A-HALF MILES SECTION OF PIPE.—During the week a series of observations of a very rigid character has been made upon the Croydon Atmospheric line, for the purpose of ascertaining the capacity of the system for regularity of working. The time of starting and arrival, of entering and leaving the valve, as well as that occupied in performing each quarter mile, was taken by two gentlemen, each having a marine chronometer of C. Frodsham's. During 21 of the trips the time was also noted by our reporter with one of Dent's split seconds hands watches, and in no one mile was there a variation of more than half a second of time in the observations of the three. The result of the notes taken showed the loss of time on the 21 trips to be less than a second per train. There was but one engine working at Norwood; but the speed by the express trains frequently reached 60 miles per hour. The most interesting result obtained was that of the working of the 6.50 afternoon express train of yesterday. The train was a light one, consisting of four carriages only, weighing about 23 tons. The maximum speed was not higher than 40¾ miles per hour, but the whole 4½ miles of pipe were worked *without the intermediate Norwood engines*, and the piston entered the tube *within two minutes after that of the down train had left it*. The following is the working—taken by chronometer and split seconds hands watch:

	h. m. s.	Intervals in seconds.	Miles per hour.	Vacuum in inches.
Started from Croydon Platform	6 51 0			
Passed valve	„ 52 42	„	„	16
¼ of a mile post	„ „ 59¼	„	„	„
½ „ „	„ 53 36½	37	24⅓	„
¾ „ „	„ 54 6	29½	30½	„
1 „ „	„ „ 30½	23½	38⅓	„
1¼ „ „	„ „ 56½	26	34½	„
1½ „ „	„ 55 22½	28	34½	„
1¾ „ „	„ „ 46½	24	37½	„
2 „ „	„ 56 13½	27	33⅓	„
2¼ „ „	„ „ 39½	26	34½	8½
2½ „ „	„ 57 6	26½	33⅓	„
2¾ „ „	„ „ 32½	26½	33⅓	„
3 „ „	„ „ 59	26½	35½	„
3¼ „ „	„ 58 24	25	36	„
3½ „ „	„ „ 49	25	36	„
3¾ „ „	„ 59 13½	24½	36½	„
4 „ „	„ „ 36	22½	40½	„
4¼ „ „	„ „ 59	23	39	12½
4½ „ „	7 0 21	22	40¾	„
Passed valve	„ 2 20			
Stopped at Forest-hill Station	7 2 59			

There is no doubt that, had the engines been allowed to work three or four minutes longer, the speed of the train would have been increased some 8 or 10 miles per hour.—*Morning Herald* of to-day.

COPPER ORES.

Sampled August 5, and Sold at Andrew's Hotel, Redruth, August 20, 1846.

Mines.	Tons.	Price.
Devon Gt. Cons. } Wh. Maria }	125	£7 11 6
ditto	122	6 13 0
ditto	121	3 9 0
ditto	120	5 11 0
ditto	116	3 4 0
ditto	110	5 16 6
ditto	104	4 3 6
ditto	101	6 10 0
ditto	100	7 10 0
ditto	80	5 15 0
ditto	78	2 16 6
ditto	77	7 10 0
ditto	71	2 18 6
ditto	70	5 13 0
ditto	69	4 13 0
ditto	68	3 2 0
ditto	33	6 10 6
Wh. Fanny	75	4 7 6
ditto	73	6 10 0
Wh. Fanny	66	£3 15 0
ditto	26	4 16 6
West Caradon	109	6 15 6
ditto	84	6 12 6
ditto	74	6 8 6
ditto	40	8 13 6
ditto	30	2 14 0
ditto	29	6 6 0
Fowey Consols	106	5 0 6
ditto	104	5 4 0
ditto	98	4 11 6
Wh Friendship	84	6 12 6
ditto	76	7 18 0
ditto	64	7 3 0
Marke Valley	111	2 8 6
Holmbush	106	6 7 6
Bedford United	92	6 10 6
Wh. Gorland	16	5 5 0
ditto	10	1 4 0

TOTAL PRODUCE.

Devon. Gt. Consols, Wh. Maria, Wh. Fanny	1805	£9477 17 0	Wh. Friendship	224	£1614 10 0
West Caradon	366	2381 2 6	Marke Valley	111	269 3 6
Fowey Consols	308	1521 16 0	Holmbush	106	675 15 0
			Bedford United	92	600 6 0
			Wh. Gorland	26	96 0 0

Average standard	£ 89 2 0	Quantity of fine copper	280 tons 10 cwts.
Average produce	9¼	Amount of money	£16,636 10 0
Average price per ton	£ 5 9 6	Average standard of last sale, £101 15 0	
Quantity of ore	3038 tons	Average produce ditto	7¾

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Tons.	Amount.
Mines Royal	145	£938 3 6
English Copper	617½	3167 16 3
Vivian and Sons	839	5102 1 0
Freeman and Co.	99	502 17 6
Grenfell and Sons	522½	2842 11 9
Sims, Willyams, and Co.	394	1604 19 6
Williams, Foster, and Co.	421	2478 0 6
Total tons	3038	£16,636 10 0

Copper ores for sale on Thursday next, at Andrew's Hotel, Redruth.—Mines and Parcels.—United Mines 1092—Tresavean 429—South Caradon 300—Treleigh Consols 213—Par Consols 200—Creeg Braws 146—Trethellan 96—North Downs 59—West Trethellan 31—Penstruthal 16.—Total, 2582 tons.

Copper ores for sale on Thursday week, at Serpell's Hotel, Pool.—Mines and Parcels.—North Roskear 900—Consolidated Mines 619—Tincroft 421—Wheal Seton 280—Fowey Consols 260—South Roskear 254—South Wheal Francis 205—South Wheal Basset 180—East Wheal Crofty 173—Wheal Harriet 160—St. Agnes Consols 115—Lanivet Consols 99—Hallenbeagle 79—West Fowey Consols 67—Tretoil 61.—Total, 3873 tons.

COPPER ORES

Sampled July 29, and Sold at Swansea, August 19, 1846.

Mines.	Tons.	Prod.	Stand.	Price.
Santiago	120	16	£82½	10 19 6
ditto	118	16½	80½	10 17 6
ditto	105	16	82½	10 19 6
ditto	89	16½	82½	11 2 0
ditto	99	25½	78	17 8 6
ditto	87	25½	78½	17 11 6
ditto	84	25½	78½	17 10 6
ditto	83	25½	77½	17 9 6
ditto	54	25	78½	17 8 6
Cobre	105	13½	82½	8 15 6
ditto	102	13½	84	9 2 0
ditto	81	13½	83½	8 13 6
ditto	76	23½	76½	15 16 0
ditto	63	24½	76½	16 10 6
ditto	70	12½	85	8 5 6
ditto	42	12½	85	8 5 6
Copiapo	106	27	82½	19 18 6
ditto	101	28½	80½	20 11 6
Copiapo	99	27½	81½	£20 5 6
ditto	97	27½	81½	20 1 6
Berchaven	126	9½	93½	6 14 6
ditto	123	9½	92½	6 17 6
ditto	110	9½	93½	6 14 6
Knockmahon	104	12½	89½	8 17 0
ditto	97	9½	94	6 11 0
Chili	49	46	75	32 6 6
ditto	47	45½	75½	32 3 0
ditto	36	45½	76	32 10 0
Australia	61	19½	83½	14 1 6
ditto	57	20	83½	14 8 6
Kaw-aw	54	12½	87	8 17 0
ditto	5	11½	89½	8 1 0
Ballygahan	56	5	107½	3 2 6
Burra Burra	23	17½	84	12 13 6
Spanish	1	1½	158	0 2 6

TOTAL PRODUCE.

Santiago	839	£11850 19 6	Australia	118	£1680 16 0
Cobre	539	5719 7 0	Kaw-aw	86	491 12 0
Copiapo	403	8144 12 6	Ballygahan	86	175 0 0
Berchaven	359	2432 14 6	Burra Burra	28	357 14 0
Knockmahon	201	1555 15 0	Spanish	1	0 2 6
Chili	132	4263 15 0			

Total tons, 2732.—Total amount, £36,672 8s. 0d.

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Tons.	Amount.
English Copper Company	560	£4315 12 0
Freeman and Co.	154	2049 5 0
Grenfell and Sons	393	3814 3 6
Sims, Willyams, Nevill, Druce, and Co.	201	3621 18 9
Vivian and Sons	533	8169 8 0
Williams, Foster, and Co.	891	12062 71 6
Totals	tons 2732	£36,672 8 0

Copper Ores for Sale, Sept. 2.—Cobre 100, ditto 99, ditto 98, ditto 76, ditto 74, ditto 94, ditto 90, ditto 85—Chili 95, ditto 90, ditto 86, ditto 67, ditto 56, ditto 52, ditto 50, ditto 49, ditto 50, ditto 48, ditto 39—Cronebane 117, ditto 85, ditto 80, ditto 55, ditto 53, ditto 36, ditto 15, ditto 10, ditto 7, ditto 1—Tigrony 1—Cuba 100, ditto 90, ditto 112, ditto 35, ditto 25—Knockmahon 119, ditto 105, ditto 62, ditto 56, ditto 39—Cube 98, ditto 91, ditto 84, ditto 67,—Berchaven 178, ditto (not ready)—Ballymartach 79, ditto 44, ditto 28—Llandidno 33, ditto 30—Alley Regulus 45—Kapunda 5.—Total, 3352 tons.

NOTICES TO CORRESPONDENTS.

We are again compelled to postpone our remarks on the Cost-Book System, as also several interesting papers, for which, and other matters, we shall endeavour to find space in an Enlarged Sheet next week.

"R. C.," (Ives).—*8l.* includes all calls, but a discovery has raised them to 10*l.* this week.

"W. H. S." (Clerkenwell)—"A Mole" (Pool)—"H. W. P. (Callington)—"A Miner" (Tavistock)—"A. T. J. M." (Penzance), &c., &c., in our next.

Errata.—In the letter on the Mineral Wealth of Algeria, the height of the Table Mountain was represented as "300," instead of 3000 feet, and Walwich Bay was printed "Woolwich" Bay.

THE MINING JOURNAL

And Atmospheric Railway Gazette.

LONDON, AUGUST 22, 1846.

The American President signed the new Tariff Bill on the 31st ultimo, to come into operation on the 1st December next. In the meantime, we may expect to see an important demand from America for iron, now there is some prospect of this country requiring importations of Indian corn, to make up for the anticipated deficiency of the potatoe crop, particularly in Ireland; and it has been declared in Parliament, no importations of food will be made by the Government to interfere with commercial enterprise.

In another column will be found some memoranda "associated with Cornish Mines," which are well deserving attention—while, on the present occasion, we shall confine our observations to one case alone, to which reference is made. We may here briefly state the matter as it stands; for, we feel assured, it only requires to be made public to cause it at once to be *repudiated*. Our readers are aware that, within the past few years, there has a revolution in the affairs of the Duchy of Cornwall; and that, by the appointment of active and intelligent officers, its revenue has been considerably enhanced—while much property, which had been previously neglected, has been rendered available. This is as things should be, and we congratulate the infant duke on the accession to his revenue; but, at the same time, agents or officers, however well they may fulfil their duty, may, perchance, overstep the bounds of prudence—we had nearly said, honesty: however, let the facts speak for themselves, and let others form their own opinions.

We have, on more than one occasion, adverted to the terms on which the Wheal Williams sett was granted—viz.: $\frac{1}{12}$th dues, and 30 per cent. out of the profits. This alone was disgraceful as a precedent both to the grantors and grantees; for it must have been apparent to the one and other, that no mine could ever be worked with advantage or benefit on such exorbitant terms, without recourse to some ruse which could only be excused under similar circumstances. We have here a piece of ground, heretofore neglected, with lodes improved, granted by the Duchy on terms which have tended to inflict much injury, both on lords and adventurers. The former, with such a precedent, are now in the habit of requiring a bonus to be paid them, in addition to high dues; and this despite the influx of foreign ores, which, during the past 12 months, formed nearly two-fifths the copper smelted in this country—while the smelters and other interests will, assuredly, in the next session of Parliament, succeed in obtaining the remission of the import duty. We are well aware that a course is open to the adventurers to evade the payment of this 30 per cent. of the profits by a profuse expenditure in the management of the mine; and *we* most certainly should not blame them were they to appoint a numerous committee, and to pay them handsomely for their services. The Duchy, we consider, although entitled to so large a proportion of the net profits, we presume has no right to interpose, as regards the management or the expenditure—and hence the surplus may be diminished, so as to add but a trifle to his Royal Highness's revenue. One evil which arises from these extravagant terms being exacted is, that the chances are the mine is not efficiently worked. In saying thus much, we must be understood as speaking in a general sense, and not directing our observations to this particular case; but it must be apparent that, with terms such as we have adverted to, it is not to be wondered at if the mine be left unworked, or speedily abandoned; in which latter case an injury is inflicted on the lord and adventurer—while none reap the benefits which might attend the successful prosecution of the mine of granted on liberal terms. There is one question connected with this arrangement, of a portion of the profits being secured to the Duchy, which we think worthy a passing remark.

How far is the Duchy compromised by this arrangement, as to the debts or liabilities of the mine? To all intents and purposes it would appear to us, that the Duchy is in the position of a partner, as participating in the returns, or profits, of the mine, over and above the dues, or rent charge; the amount receivable being dependant on the profits, or returns, of the mine, over and above the costs in working the same. Now, it is clear, that ere any returns can be made, or indeed contemplated, that a serious outlay must necessarily be incurred in the erection of engine, with machinery, &c.; many fathoms of ground must be sunk and driven, and time consumed ere profits arise. Let us, then, see in what position the Duchy would be, if that, instead of profits, losses should accrue, liabilities be incurred, and the body of adventurers unable to meet their engagements. Surely, in such case, the creditors would have some claim on those who were to participate in the profits—for such were calculated on arising from the application of the machinery, which possibly remains unpaid for. We are aware that this view is one which may be considered as taking an extreme, and it may be said an improbable, case; but it is right that the matter should be taken in all its bearings—for it must be clear that, if the Duchy be not liable, then that the arrangements is not based on equitable principles, as a third party might suffer from this iniquitous bargain.

We now turn to another pretty little manœuvre of the Government officers, and to which we would wish to direct the especial attention of our readers. It is that of the Duchy becoming, as it would be termed in Ireland, a "middle-man,"—that is to say, taking property at one rate, and setting it again at a profit rent. A brief statement of the case will at once convey our meaning. There is a sett in the immediate locality of Wheal Williams, called West Wh. Williams—a portion of which is Duchy land, and the remainder freehold, belonging to a Mr. Oliver (we like to be precise in these matters). Certain parties having applied to the Duchy for the grant of such portion as they are empowered to set, terms were agreed upon of $\frac{1}{13}$th dues; but inasmuch that this portion of the sett cannot be worked without the residue being acquired, it has been proposed to work the two together,—and to which, we are given to understand, the lord is agreeable, upon an equitable arrangement being entered into, whereby the several properties are amalgamated. This would appear all fair, and such as would be readily acquiesced in—more especially when it is remembered, that neither property can be worked alone; but here it is that the Duchy interposes,—and, although willing to grant their rights at $\frac{1}{13}$th dues, consider that the more humble lord should be content with less, and accordingly set down as $\frac{1}{12}$th, being an ample dish for him. We were disposed to think, when the information was first conveyed to us, that the Government or their officers, in thus interfering, were actuated by a desire to promote the interests of the adventurers; and by obtaining for them the grant at $\frac{1}{13}$th dues, thus reduced the aggregate, and, blending the two, made the dues $\frac{1}{12}$th; but what was our surprise when we discovered, that the real object and attention was—that the Duchy should take to the property at $\frac{1}{13}$th, and reset it at $\frac{1}{12}$th; or, in fact, retain as a middle-man one-seventh, or about 14 per cent. out of the dues—thus abstracting it either from the lord or adventurer. This is the simple case, and we call on all mine adventurers to resist such an attempt at exaction; while we feel that all honourable men must blush at the mention of an attempt (for such we trust it will alone be, after this exposure), which is calculated to reflect so much discredit on the Government and its officers.

WHAT IS THE COST-BOOK SYSTEM?

[FROM A CORRESPONDENT.]

1. To have a license or lease from the owner of lands in which it is intended to search for minerals, granted to some one or more of the shareholders—it having been decided that, where there is no license or lease, there can be no mine in which a company can have any interest, or to which they have any claim.

2. To have a "cost-book," in which a purser is named, who enters therein the name of the party granting the license or lease, with the number of shares into which the mine is divided, together with the names and residence of the parties taking the shares, who sign the same for the given number of shares taken by each, and declare that book to be the "cost-book" of the mine.

3. When all the shares are taken, and the "cost-book" signed, the purser is to call a general meeting of the shareholders, to be held in London or elsewhere (which may be most convenient for the shareholders), by giving 8 or 10 days' notice of such meeting, when bankers, a captain, or other agents, be appointed, with their respective salaries; and if it is intended to have a committee of management, such committee is elected,—but the captain, agents, or committee, may be removed, and others appointed at any future meeting.

4. No call can be made to defray the expenses of working the mine but at a general meeting of the shareholders, convened by the purser, by his giving notice as aforesaid,—when a majority of the shareholders, either present or by proxy (such proxy being on a 2s. 6d. stamp, and used by a shareholder only), make a call of such sum per share as they may think proper, to be paid into the hands of the bankers, and drawn out by the purser, or by the committee of management, as may be agreed at the first, or any other general meeting of the shareholders.

5. The monthly cost-sheet of the mine is made out by the purser and captain, when a cheque is drawn for payment thereof by the purser; or, if there be a committee of management, such cost-sheet is sent to them by the purser, for their examination and approval, who send a cheque to the purser for the amount.

6. The purser, at the end of every two months, is to call a general meeting of the shareholders, to inspect the accounts; and forward to each of the shareholders, after such meeting, a copy of the receipts and expenditure; and if there be not considered to be sufficient funds at the bankers', or by sale of ores, to meet the expenses of the next two months, the purser is to call a general meeting of the shareholders, to make a call for that purpose.

7. On the sale of ores, the purser receives the bill from the smelters, and pays it to the bankers, on account of the shareholders; and at the general meeting, held every two months, the shareholders determine what dividend shall be paid out of their funds at the bank.

8. In case any shareholder shall neglect or refuse to pay the call on his shares, when made as aforesaid, within the time limited for payment thereof, such shareholder may be sued for the same in the Stannary Court, if the mine be in Cornwall, and his shares sold or forfeited,—and if the mine be elsewhere, he can be sued at common law; but no shareholder, being a defaulter in payment of his calls, can vote at either any general or committee meeting.

9. The transfer of shares is made in a common form, and requires no stamp—it being a notice from the seller to the purser, that he has transferred a given number of shares to the purchaser; and notice from the purchaser of his acceptance thereof—when the purser registers the transfer in the cost-book, and gives notice thereof to the purchaser; but all calls must be made before the purser will register such transfer.

10. No mine can be abandoned, and the company dissolved, but at a special meeting, to be called for that purpose by the purser.

Thus, you will perceive that no business beyond the examination and payment of the cost-sheet can be delegated to a committee—all other matters are to be settled at general meetings, by a majority of the shareholders; and as the accounts are settled every two months, the shareholder has no liability to fear. When calls are made by a committee, such calls cannot be enforced,—and any departure from the Cost-book System brings the company within the meaning of the Joint-Stock Company's Act, 7 & 8 Vic., c. 110, by the 63rd section of which all mines worked on the Cost-book System are specially exempted from the provinces of that Act.

Any mining company, therefore, professing to be conducted upon the Cost-book Principle, but not acting in accordance therewith, are subject to all the pains and penalties of the Joint-Stock Companies' Act, which are neither *light* nor *few;* and all tranfer of shares made are illegal, and the protection and great advantage of the Cost-book System to such is lost. I would beg to call attention of the various committees of management, as well as shareholders, to this subject,—and if I am wrong in any point, I shall be happy to be corrected.

British Association.—The 16th annual meeting of the members and friends of the British Association for the Advancement of Science, will be held at Southampton, in the week commencing Thursday, the 11th Sept., and the congress is expected to be more fully attended than at any previous meeting—not only from its proximity to the metropolis, but the easy means of access with France, from whence a numerous attendance of members of the French Geological Society is expected, from the influence of the president, Sir Roderick Impey Murchison. We are glad to find, a liberal subscription has been made to the receptare fund, and that the town council have placed at the disposal of the local committee all their available resources for the accommodation of the members. The chief excursions will be to Portsmouth, Gosport, and the Isle of Wight; and the docks arsenal, and stores, of the two former will, as was the case at Plymouth, b open to members, on the production of their tickets.

We notice, in the *Mechanics' Magazine*, of last week, the publication of a plan, which, whatever may be found its practical merits, in theory, at least, most effectually provides against the evils attendant on a short stroke, and rapid movement of steam. It is called an hydraulic intervener—the invention of Mr. Alfred Gregory, who proposes more immediately to apply it to screw propelling, and thereby avoid all rough gearing, or the disadvantages of a short stroke at a quick speed—a decided objection with "low pressure." The means consist of two small cylinders, but the one considerably larger in diameter than the other, though of the same capacity—the difference existing in length of stroke. In each of these there is a piston; the larger one of a short stroke, worked by the usual steam piston, through means of a bell crank from the *versed sine* of the *arc*, and not at a *tangent* as usual—thereby yielding *two* strokes of short-stroked piston to *one* of steam. The two cylinders, first alluded to, are connected by branches from the opposite sides of pistons, and the intermediate spaces filled with oil, when it will be evident the larger piston working the smaller one will do so with an increased speed, corresponding with the difference of area; to the rod of smaller piston is attached the crank, thus made of any length of throw, not dependant on steam cylinder, and centre pressure avoided, so objectionable at quick speeds; also *double* the number of revolutions, or only *half* the movement of steam for same number. There is affixed a valve, which prevents leakage, and, relieving itself, also counteracts breakage of the machinery from any sudden overstrain or shock. The small size of parts, and smoothness in working, with the gain of slow action of steam for large number of revolutions, and unrestricted throw of crank, bespeak advantages which have led to our consideration of it here, and more particularly as the application of it is proposed to railways, and *other* purposes; whether its introduction for pumping or lifting, in procuring difference of speed and stroke, might be applicable or desirable for mines, we are not on the moment prepared to say.

Mines and Steam Power of France.—The *Journal des Debats* has published two important articles on the mineral resources and steam-power of France—supposed from the pen of M. Michel Chevalier—some of the chief details of which are here extracted. The statistics are founded on the year 1844. France, it is said, in the order of importance in coal-mining wealth, takes the third rank; that is, comes after England and Belgium: in iron she occupies the second place. The absolute and relative consumption of iron and coal in those states in which it is officially known is thus stated:

Countries.	Coal.	Iron.
England	*Tons* 23,500,000	1,200,000
France	5,400,000	480,000
Belgium	3,200,000	120,000
Zollverein	3,000,000	300,000

These figures give the consumption per head, in—

England, at	*Kilog.* 870	*Kilog.*	40	75
Belgium	800		30	—
France	154		13	71
Zollverein	107		10	71

In 1844, France reckoned 423 mines of coal, covering about 450,000 hectares; 252 were in work, and 173 remained still in inactivity. The working of the 252 mines, the greater part of which were distributed among twelve principal basins, employed in 1844, 39,554 workmen, and produced 3,055,000 metrical tons of coal, 580,000 of anthracite, and 548,000 of lignite; total of combustible material, 3,783,000 tons, or in kilogrammes, 3,783,000,000. This was about the seventh of the production of England, and a little less than the total Belgian extraction. For, it must be noted, that, in addition to the quantity consumed at home, as before stated, Belgium exported in that year, 1,300,000 tons. Since 1839, the number of the mines worked in France had increased only as 6 to 8; but the extraction advanced from 28 to 30 per cent. Production, however, was still so much in arrear of consumption, as to require from Belgium and England 1,758,000 tons more. It is as yesterday only, so to say, that steam has been employed as a moving power, and yet it already furnishes the globe with a force estimated at more than 10,000,000 of horses, or 60,000,000 of men. The actual effective of steam-engines in France is thus stated: For purposes of industry, the number is 3645, serving 1214 establishments and manufactories, and representing 45,781 steam horse-power, or, at three draught horses per steam-horse, 137,340 draught horses. Since 1839, this mechanical material had increased in the proportion of 45 to 50 per cent. The steam-engines employed in navigation, form a total of 382 vessels, with a collective force of 12,789 steam horses. The increase under this special head, in six years, has only been from 25 to 30 per cent. The number of passengers transported in 1844 by steam-vessels was 3,287,000, and of merchandise 1,082,000 tons. The number of the first, compared with 1843, was about stationary, and for the latter in decrease. The competition of railways would account for the fact. The locomotive machines gave in 1844, a total of 292; serving 16 lines of railway. Of this number, 168 were of French workmanship, and 124 of foreign origin. This was an increase of 46 machines upon 1843, and of 88 upon 1842. In total, France possessed, in 1844, 4319 steam-engines of all sorts, of the collective steam-horse force of 82,950, or of 182,847 draught horses, or, at the rate of about six men to one draught horse, of 1,321,929 men. Such is the industrial army which steam now furnishes to France, and, whatever may be written against machinery, we do not find that the employment of this mechanical power has yet left the people bereft of work. Since the last four or five years, the number of steam-machines augments rapidly in France, and yet, it is necessary to say, it represents scarcely $\frac{1}{10}$th of the mechanical power employed in England.

We understand that our correspondent, Mr. Goodlet, has fitted up a boiler on a large scale at his premises, John's-lane, Leith, to prove the advantages of indirect evaporation as applied to marine and locomotive engines, boiling of sugar and cane juice, distillation and evaporation in general. A comparison, we are informed, is challenged with any other boiler, or plan of evaporation, as regards simplicity of construction, safety and durability, economy of first cost, compactness of space occupied, power of generating steam, and saving of fuel. Experiments can be tested by showing the exact quantity of water evaporated, and the weight of the fuel consumed. We shall be glad to be kept informed of the progress of the trials

Gold, Gold!—Discovery of another Pactolus.—A Belgian paper gives the following strange tale, the truth of which it vouches for, and states that more extensive details are in its possession, and could be given—only that they might be prejudicial to the realisation of the enterprise:—"A distinguished French engineer, who was sent some years ago to Panama, to make geological researches, and study the question of piercing the isthmus, has brought back some specimens of gold, which Baron Thenard, after chemical assay, has pronounced to be of the greatest richness. The engineer states, that he had gathered this gold in the sands of a river of the isthmus. Such are the riches of the grains of gold, which this river rolls along, that the natives, who are occupied in gathering them, gain 50 fr. per day, and that the sands they wash contain still, after the operation, more than double the quantity of gold which they had obtained from them. The engineer had examined with care the course of the river to its source, and remarked that it traversed an enormous group of rocks, in the midst of which it must have been depositing for ages a vast mass of grains of gold. According to his estimates, there must be far more than eight milliards of francs of gold mineral buried under these rocks.—(One milliard of francs, it may be observed here, is equal to 40,000,000*l.* sterling.) When the engineer made known the result of his researches and conjectures at home, he met only with incredulous hearers, and was treated as a visionary. Notwithstanding he has given details so precise, he appears so certain of the success of a future exploration, that several capitalists have resolved to confide to him the funds necessary for exploring on a great scale the sands of the river. For this purpose it was resolved not to form a company by shares, but to confine the enterprise to a certain number of capitalists, willing to run the risks of the affair. The capital embarked in this undertaking will be either entirely lost, or will produce more than 1,000,000 per cent. to those who may subscribe the funds. The engineer himself engages not to require any share of the profits until the enterprise shall have realised three milliards of francs (120,000,000*l.* sterling!). Here are, as may be seen, all the riches of Potosi, all the gold of Pactolus, which it is expected will be found united between the two parts of America. The preparations for the undertaking are already in an advanced state. The dredging machine boat for the operations is in course of construction, and the departure of the engineers and workmen will take place in two or three months. If this affair, which has been in hand for several years, has remained unknown to the public, the reason is, that the parties engaged in it look upon their capital advanced as being exposed to an extraordinary risk; and, therefore, anxious to avoid being held up to ridicule, by appearing to have too much confidence in the result of these researches." Such is the marvellous story. It is evident, from the length of years spoken of since the enterprise was first proposed, that the French engineer was one of those sent out in the famous bubble year of 1825, to make surveys in Panama, for one of the projects of a canal, for which several companies were formed in that year, in this country and elsewhere.

New Rotary Steam-Engine.—Perhaps the most important and useful invention that has appeared for a considerable time, is the one to which we now allude. We have had a model of this engine shown to us; at our office, and, in our humble opinion, its invention forms an era in the history of mechanical science. There are two great difficulties in the way of all other rotary engines—viz.: the want of a steam-tight piston, and surface of piston within any reasonable diameter, on which steam is to act. This invention takes up these grand points, and supplies the *desiderata*. The pistons act on the principle of the present *slide valves*, an edge of which is only subject to rubbing surface, by which an almost unlimited durability of a steam-tight piston is obtained; and with regard to surface of piston, we need only state, that an engine constructed on this principle, of 3 ft. in diameter, and 2 ft. 2 ins. in length, inside measure, exposes a piston of 288 in. of surface, on which steam is to act. In other words, its consumption of steam would be equal to a common engine of 3 ft. stroke, of about 22 in. in diameter. But the power developed would be one-third in favour of the rotary engine, as well as being capable of working at three times the velocity of the old engine. Another of the great beauties of this engine is this, that the friction is not 2 lbs. on the inch in one of 22 in. in diameter, when revolving at 70 revolutions per minute; and that the friction is not increased while the engine is performing the heaviest duty, except only on the bearings, which must always be in proportion to the weight upon them. This engine does away with valves, crank, connecting rod, and fly-wheel, and has an even and uniform power.—*Birmingham Journal.*

The Ford Abbey estate, which our readers will remember was sold by George Robins a few weeks since to the Rev. Lawrence Gwynne, of Teignmouth, for 52,000 guineas, is, we perceive, most unexpectedly again in the market. The advertisement explains the *why* and the *wherefore;* at all events, it will afford an opportunity to the Catholic body, who delayed arriving at a favourable conclusion in time for the last auction, to repair the mischief they then encountered. It is beyond all doubt the finest monastery throughout England, and, with its splended demesne, was estimated the other day at 70,000 guineas—so that the possibility is, that at the approaching sale (which must be a peremptory one), it will sell higher than to Mr. Gwynne; but we say "*nous verrons.*"

PROGRESS OF FRENCH MINING INDUSTRY.

[FROM OUR PARIS CORRESPONDENT.]

A grand dinner was given yesterday to Mr. Cobden, by the Free Trade Associations and Free Trade partisans of this capital, in honour of his glorious exertions at the head of the Anti-Corn Law League. Mr. Cobden, in replying to the toast drunk to his health, made a speech of some length, in which he relates the history of the League, and demolished some of the principal Protectionist sophisms. The Free-Trade Association in France is only yet in its infancy; but it has already a long list of members, and numbers in its ranks many men of great talent and influence. It will have a hard fight to succeed in beating down monopoly in this country. Perseverance, however, will effect miracles.

Iron may be considered the stronghold of the monopolists of France, as corn was that of England. Abolish the duty on iron, and those on cotton twist, and on other articles of lesser importance, will go immediately after. Against iron, therefore, I understand the free traders propose to make their first onslaught. They have already shown the disastrous and ruinous effects of the iron monopoly on the mercantile shipping interest; and your readers have had, in the Paris Correspondence of your Journal, quotations of facts and figures, which prove that if some change be not promptly made in the existing duties, the shipping interest will be entirely annihilated. Agriculture, too, suffers most grievously from the present imposts; and so, in truth, does every branch of industry. "Cheap iron!" is the cry of every class of consumers, just as "cheap bread!" was the cry in England.

A glance at the gradual growth of this monopoly of iron, and iron monopoly, may not be uninteresting: in 1781 the duty on the importation of iron in bars was only 2 fr. the metrical quintal; in 1806 it was raised to 4 fr. No duty whatever was exacted on cast-iron. Up to 1814 this protection was found sufficient by the ironmasters of France, although during nearly all that time, Belgium being part of the French kingdom, they had to contend against the overwhelming competition of the Belgian ironmasters. On the establishment of peace, England and Sweden sent in about 6,000,000 kilogrammes of iron. This frightened the French so much that, notwithstanding Belgium was separated from their country, they demanded the entire prohibition of foreign iron for two years, and the subsequent adoption of such duties as should enable their iron to be sold in competition with foreign. Accordingly a law, dated 21st December, 1814, fixed at 2 fr. 20 cents. the 100 kilogrammes, the cast-iron and iron *en gueuses*, and at 16 fr. 60 cents. the iron in bars. The law was adopted with great regret as a temporary measure. In 1822 the duties on cast-iron were raised to 8 fr. 80 cents. the 100 kilogrammes; and on iron from coal to 27 fr. 50 cents. At the current prices of the day of English iron the 16 fr. 60 cents. duties were equivalent to from 75*l.* to 80*l.* per cent.—that is to say, the French consumer paid 175*l.*, or 180*l.* for what he could have received from England for 100*l.*; at the increased duties of 1822 the increased tax upon the consumers was equal to about 150 per cent. By means of these duties not less than 31,000,000 fr. annually were levied from the consumers. The ironmasters, however, contended that they did not receive all that amount, but that the wood sellers obtained the greatest part of it. Whatever truth there was in that statement, an inquiry took place, and the consequence was a reduction of 1 fr. in the duty on cast-iron, and of one-fifth of the duty on iron. In 1834 the Government caused a reduction of 5 fr. per 100 kilogrammes to be made in the duty on iron from coal, with the intention of subsequently making still greater reductions. In 1835 a further reduction of one-fifth of the duty on iron from coal, and of 1 fr. on cast-iron, was carried into effect by royal ordinance, and an intimation was given that it was desirable to reduce by one-half the duty on foreign rails. In the subsequent session an attempt was made to reduce the duty on iron from coal 25 per cent.; on iron from wood 20 per cent.; on cast-iron 2 fr. the 100 kilogrammes; and to admit foreign rails at 5 fr. the 100 kilogrammes. These sweeping reductions were, however, not accepted; but the mere proposition of them frightened the ironmasters into promising that, before long, iron should be as cheap in France as it ever had been in England—that it should be sold at 120 fr. (4*l.* 16s.) the ton. But time went on, and no reduction took place. In 1841, the complaints of high prices having become general, the Government convoked the Councils General of Commerce; and asked if, with due regard to the interests of the ironmasters, some reduction could not be made in duties equal to 70 per cent. on cast-iron, and 110 per cent. on iron? "Not yet," replied the Council, in which the ironmasters were in a majority. "When then?" asked the Government. "In six years, perhaps," replied the ironmasters; "but a duty must always be maintained, for France will never be able to struggle against the competition of neighbouring nations." "Cannot you," said Government, "make a temporary reduction in favour of railways, or let in foreign rails, &c., duty free?" "Can't reduce a farthing," said the ironmasters, "and as to admitting foreign rails it is not to be thought of." On second thoughts, however, they were graciously pleased to promise to consent to a slight reduction, when iron rails in France should be 417 fr. the ton, and in England only 200 fr. As to what took place the last time the Council was assembled, nothing was said about a general reduction of these scandalous duties on iron; and your readers will remember that, even as regards the oppressed shipping interest, the ironmasters proposed to withhold all relief. The question now is, will the present Chamber allow the present monstrous duties to remain unaltered? Will it permit railway companies to pay 385 fr. and 400 fr. the ton for rails, when they can be got in England for 230 fr. and 250 fr.? Will they allow the entire population of the kingdom to continue to be heavily taxed for the benefit of a class which has already obtained millions?

In Belgium, a railway station has been roofed in with sheet-iron at a price of 15 fr. 70 c. the square metre, with a contract to keep it in order for 20 years at 10 c. (1d.) per square metre per annum. This is the first time iron has been employed in that part of the world in the place of slates or zinc; and, if it be successful, there is no doubt it will come into general use, for it is found to be cheaper than any other covering.

At Brest, Bordeaux, Nantes, and other places, the building of iron steamers for the Government is going on actively. Several have also been constructed for private commerce, notwithstanding the high price of iron. At the latter end of this week, and the beginning of next, some large contracts will be received by the Government for iron, coal, &c., for the Royal navy and dockyards.

The Royal Chamber of Commerce of Stockholm has published returns showing that the exportation of iron from Sweden last year was 111,420,000 French kilogrammes—being an increase of more than one-third on the exportation of the previous year. The increase is ascribed to the extraordinary demand of iron for railways.

St. Dizier letters say:—"Our last *cours* were as follows:—irons *battus à la houille*, 380 fr. and 390 fr., delivered at St. Dizier; white cast-iron, in *fontes, moulées, plaques*, and *foyers*, 225 fr.; pipes, 255 fr., 260 fr.; ditto for water and gas, to 162 millimetres, 290 fr., 295 fr.; ditto to 321 ditto, 280 fr. to 285 fr.; clock weights, and other articles of domestic use, at firm prices; full columns, without ornaments, 235 fr. to 240 fr. Late prices of wood kept up well, and the affairs that took place thereat were without importance. The yards were well stocked. Some large adjudications were to take place shortly. Conveyance by water was 28 fr. for iron; 30 fr. for cast-iron; by waggon to Paris, 35 fr. to 38 fr.; Valenciennes, 42 fr.; Amiens 42 fr.; Abbeville, 55 fr.; St. Omer, 55 fr.—*Paris, Thursday.*

THE MONMOUTHSHIRE AND GLAMORGANSHIRE BANKING COMPANY AND THE VICTORIA IRON-WORKS—(*From a Correspondent*).—The half-yearly meeting of the above banking company took place at Newport on the 10th ult., when the usual dividend, at the rate of 6 per cent. per annum, was made, as I find by my dividend warrant, received a few days since. No statement of account, nor report of directors, is ever published as to our affairs; nor can the shareholders obtain the least information from the manager (Mr. Frazer), as to the progress of the Chancery suit, "Frazer *v.* Hall,"—a matter that I consider to be a very serious one, as affecting my own, as well as the interests of the shareholders generally. Your columns have been the only source of intelligence open to me; and I shall feel obliged to any of your correspondents who will afford correct information as to how matters stand, both as regards the Chancery suit, as well as the carrying on those ill-fated works.—*Cardiff, August* 19.

THE GIRVAN COAL-FIELD.—The committee on the Glasgow and Belfast Union Railway, during their sittings, examined several witnesses as to the resources of the district. Mr. J. Whitfield, tenant of the Bargeny Coal-field, five miles from Girvan, and farming extensively in the vale of Girvan, entered fully on the coal of the district, which was of good quality, the present output being 37,000 tons. If this line was constructed, it would be of great advantage; the output could then be increased to 110,000 tons, and make a saving of 6000*l.* a year in the carriage of coal between the pit's mouth and Girvan.—Mr. John Geddes and Mr. Christie, mining engineers, corroborated the evidence.

ON THE METALLURGICAL TREATMENT OF ORES.—No. IX.

Besides the mercury which condenses in the aludels, there is found a soot, having a complex composition—about 40 lbs. of this soot are collected in each operation. It contains—Very finely divided mercury, 66·0; protochloride of mercury, 18·0; cinnabar, 1·0; sulphate of ammonia, 3·5; sulphate of lime, 1·0; free sulphuric acid, 2·5; lamp black, 5·0; water, 2·5 = 99·5. Proust thought that the chloride of mercury, forming part of the above soot, proceeded from the ore itself. It is a known fact, that chloride of mercury is found in ores of this metal, and as the soots are worked off in the furnace again and again, without the addition of any substance capable of decomposing the contained chloride of mercury, it was supposed that the same chloride was distilled over at each operation, and thus was concentrated the small quantity originally contained in such enormous masses of ore. This explanation is doubtful; however, chloride of mercury may be formed in the operation itself, by means of the chlorides of potassium and sodium contained in the ashes of the fuel, and of the sulphuric acid generated during the roasting. This result can be arrived at in various ways; the following is the most simple—the mercury in the aludels may be converted into sulphate by means of the sulphuric acid in contact with it. The ashes, carried over in contact with sulphuric acid, could form sulphates of potash and soda, and hydrochloric acid be liberated. That of its passage through the aludels, containing sulphate of mercury, would convert it into chloride, and sulphuric acid would be set free. The acidity of the soot completely prevented the employment of cast-iron tubes, instead of the aludels. A trial of this kind was made at Almaden, the iron tubes being surrounded by water. The mercury condensed very well; but incrustations were formed, which were examined by Proust, who proved that the iron was rapidly attacked. The incrustations contained—Sulphate of protoxide of iron, 23·5; alum, 14·5; protochloride of mercury, 3·3; cinnabar, 6·3; mercury, 44·0; charcoal, 4.8; sulphate of lime, ·9 = 97·3. The above is evidently formed by the action of the sulphuric acid on the earthern tubes, which forms sulphate of alumina, and the sulphate of potash carried over by the draught. The protosulphate of iron results from the action of the sulphuric acid on the cast-iron, which latter was rapidly corroded in all parts.

Treatment of Mercury at Idria.—The Idrian ore is first picked on the mine, and the rich ores are placed on one side by the miner; they are then washed, and the products classed. The rich ores are placed on one side for immediate treatment; the small ore is cleansed, sifted, and picked. All the rich ore separated is mixed with that previously reserved. The poor ores are screened in sieves of different fineness; the poor sands produced in the screening are stamped and washed as usual. By these various operations two classes of ore are produced—the one large, and the other small. The large ore is subdivided into three varieties—1. The ore in large blocks having a mean richness of 1 per cent.; this is the most abundant.—2. Rich and heavy ore, having a mean richness of 40 per cent.—3. Ore in splintery fragments, proceeding from the stamping and picking made out of the mine; the richness of this varies from 1 to 40 per cent. The small ore is also subdivided into three varieties:—1. Fragments, or splinters, from the same ore, containing from 10 to 12 per cent.—2. Small lumps of ore separated by screening, containing about 30 per cent.—3. Schlichs, which contain about 7 per cent. The arrangement of these various ores in the furnace requires peculiar precautions. The immense apparatus at Idria is composed of two furnaces joined together, each furnished with chambers of condensation, to receive the mercury. Each of these furnaces has a hearth, on which wood is burnt, and an ash-pit below it; the space above the hearth is occupied by three stages, formed of arches pierced with openings; the upper part is connected with the condensing apparatus. The largest blocks are placed on the first arch, in such a manner that the flame can readily pass amongst them; the largest are placed at the lower part, and the smaller at the upper, much in the same manner as a lime kiln is charged. The second arch is appropriated to the small ores. These are placed in baked earthen vessels, which are about 10 inches in diameter, and 5 inches deep. These are placed one on the other, taking care to place those lowest which contain the fragments and lumps from the screening; above these is placed schlich in similar vessels. The third arch is completely charged with vessels filled with schlich. Similar vessels of schlich are also placed in the passages leading to the condensers, where the contents sometimes, but not always, undergo a complete distillation. The charge made, and all the openings luted, the fire is kindled with beechwood. The heat is gradually increased to cherry redness, at which it is afterwards maintained—the operation lasts from 10 to 12 hours. The draught is extremely rapid—this the formation of the furnace sufficiently explains. This rapid draught is necessary, to carry into the furnace a sufficient amount of air to roast the sulphuret of mercury, which is disengaged in the vaporous state by the heat employed, and is in proportion to its disengagement converted into sulphurous acid and metallic mercury. Mercury is condensed in conjunction with mercurial soot, containing finely divided mercury and cinnabar. The furnace is left to itself for five or six days; when cool, the contents are discharged, and a fresh operation commenced.

The cleansing of the condensing chambers is a very deleterious operation. The workmen employed are two hours in sweeping the finely divided metal from the walls. The contact of the mercury with the skin or lungs, and its consequent absorption, rapidly induces salivation, after which all the nervous affections produced by mercury occur. Each furnace contains from 12 to 24 tons of small and large ore, with schlich.

In our next week's article we shall commence the examination of the processes adopted for the extraction of silver from its ores.

IMPROVEMENTS IN THE MANUFACTURE OF IRON.

[Specification of patent granted to Rees Davies, gent., of Ystradgunlais, in the county of Brecon, for improvements in the manufacture of iron.]—From Newton's *London Journal.*

This invention consists in so conducting the process of manufacturing iron, when anthracite, stone-coal, or culm is used, that the charge may be caused to enter the blast-furnace in an ignited state.

Fig. 1, is a vertical section of a blast-furnace, suitably constructed for carrying out this invention; fig. 2, is a horizontal section, taken on the

Fig. 1.

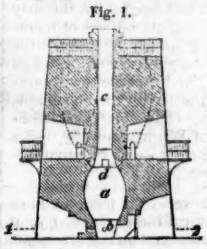
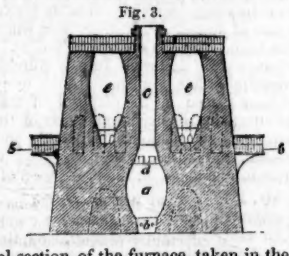


Fig. 3.



line 1, 2, of fig. 1; fig. 3, is a vertical section of the furnace, taken in the direction of the dotted line 3, 4. (fig. 2); and fig. 4, is a horizontal section,

Fig. 2.

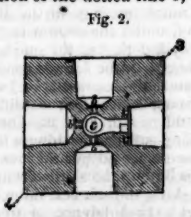
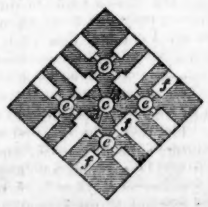


Fig. 4.



on the line 5, 6, of figs. 1 and 3. *a*, is the part of the furnace in which the blast operates; this part is constructed in a similar manner to the ordinary blast-furnaces from the lower parts up to the boshes, and the blast (whether hot or cold) is applied in the usual way by the tuyeres *b*, *b*. Above the part *a*, the interior of the furnace is contracted, and forms a chimney *c*, to carry off the gases and products of combustion: the charging of the furnace is not effected through the tunnel-head or chimney *c*, but through the passages *d*, *d*, excepting the first charge, which must be made with unignited materials, in the ordinary way. *e*, *e*, are kilns or chambers, into which the charges of iron ore, fuel, and flux, are continually introduced and ignited; the upper ends of the chamber are open to receive the successive portions of the charge, and the lower ends communicate with the furnace *a*, by the passages *d*. *f*, *f*, are openings for stirring the charge and regulating the passage of the descending materials from the chambers *e*, into the furnace. The blast does not act on the charge contained in the chambers *e*; but the anthracite being kept in a state of partial combustion, by the draft of atmospheric air through it from the passages *d*, there will be a previous ignition of the charge going on in the chambers *e*; this is important—as anthracite, stone coal, or culm, which has been ignited before being brought into contact with a blast of air, works more favourably in the manufacture of iron (either with hot or cold blast) than when thrown in a cold state into the blast-furnaces; and the ore, after the above process, is in a more suitable state for introduction into the blast-furnace.

The patentee remarks, that, although, he believes it to be best to use anthracite, stone coal, or culm alone, yet other fuel may be mixed therewith; and that, although, he has shown the best arrangement of furnace that he is acquainted with, he does not confine himself thereto, so long as the charge can be supplied to a blast-furnace in an ignited state.

He claims the manufacture of iron by means of anthracite, stone coal, or culm (whether used alone or mixed with other fuel), which has been, together with the iron-stone or ore and flux, before its projection into the blast-furnace, brought into a state of ignition by a draft of atmospheric air, in chambers so arranged as not to interfere with the blast-furnace.

MINING IN CORNWALL AND DEVON.—No. VI.

WHEAL SUSAN.—This mine is situate in the parish of Lamerton, near Lydford, Devon, two miles from Wheal Friendship. The sett extends 500 fms. on the run of the lodes, which take a direction 25° north of west, and south of east, with an underlay of 2½ ft. in a fathom—the extent of the sett north and south is 300 fms. The mine is held under letter of license for lease of 21 years, at $\frac{1}{15}$th dues, from John Davy Weekes, Esq., and is conducted on the Cost-book System—two monthly meetings being held at Tavistock. Thomas Weekes, Esq., acts as purser, and the management of the mine is confided to Capt. Jonathan Davy. The capital raised somewhat exceeds 1800*l.*; the number of shares being 1024, on which 1*l.* 16s. 3d. per share has been paid—the amount expended being about 1500*l.* The average monthly cost may be taken at 90*l.*; and a small parcel of ore, 12½ tons, of about 10 per cent. produce, is about being put to ticketing. The distance from shipping port is 10 miles; the cost of carriage being 7s. per ton. There is no engine-power employed at present. The number of lodes discovered at present are four—two only of which have been opened upon; they are composed of gossan, spar, mundic, with branches of ore. The north lode has been intersected at the 15 fm. level by a cross-cut driven 10 fms., to take the lode, from which the ore principally raised has been obtained—the workings having extended 40 fms. east and west. This shaft is now down 26 fms., and a cross-cut put out to take the lode, which is expected in about 5 fms. driving, which will prove the lode at that depth. Another shaft has been sunk on a lode about 100 fms. further south to a depth of 14 fms.; and the number of men employed is about 15, whose average monthly earnings are from 60s. to 65s. The country is a dark killas, and two cross-courses have been met with, which are at right angles with the lodes. It is proposed to erect an engine, and to proceed with the mine with energy, on the lodes being further developed.

WHEAL VENLAND.—This mine, which is situate in the Caradon district, and overlooked in our report, although the information had been acquired, although somewhat imperfectly, but since amended, joins St. Cleer Consols on the south and south-west. The extent of the sett is about 500 fms. on the course of the lodes, which are 10 in number, with an east and west direction, and an underlay north; two of which have been opened upon, containing gossan, and spots of ore. The sett is held under lease of 21 years, of which one year has expired, at $\frac{1}{15}$th dues or dish, from Captain Edward Moorshed. Mr. John Bowden, jun., fills the office of purser, and Capt. James Nance that of captain. Two committees are formed, having the management of the affairs of the company—one in Liskeard, and one in London. The mine is divided into 128 shares, on each of which 12$\frac{7}{8}$*l.* has been paid, making a capital of 1648*l.*; meetings being held for auditing the accounts, and making calls when found necessary. The monthly cost averages 50*l.* An engine of 23 inch cylinder has been erected, and there is a stream of water, but which is not applied. Two shafts have been sunk; one of which is down 8 fms., and the other 13½; and an adit level driven 250 fms., at a depth of 13½ fms. There are only 12 men employed at present; the average monthly wages, 60s. The engine is not at work.

OLD HARROWBARROW MINE.—This mine is situate west of Harrowbarrow Consols, and east of Silver Valley and Wheal Mexico, taking the lodes which pass through those setts. The extent of the sett is about 400 fms. east and west, and the like distance north and south, except on tin lode, where it extends to 600 fms., and is held under lease of 21 years, of which 18 have to run, at $\frac{1}{15}$th dues, from the Duchy of Cornwall, and W. Worth, Esq., and Capt. Bennetts. The management is with Capt. Benjamin Cooke and Mr. J. Kneebone, who is the resident agent; George Carne, Esq., of Plymouth, being the purser. The mine is carried on under the Cost-book System—the meetings of adventurers being held every two months, alternately on the mine, and at Plymouth. The number of shares is 1000, on which 4*l.* 10s. per share has been paid up—making a capital of 4500*l.* The monthly cost is about 260*l.*, out of which four-fifths are expended in labour. A combined cylinder engine has been erected of 20-in. and 36-in., equal to a 30-in. single, with 7-ft. stroke in the shaft, and 8 ft. in the cylinder; the quantity of coal consumed being about eight tons monthly. There are four lodes on which workings are being carried on—viz.: the tin lode, which is 4 ft. big, with a 2 ft. underlay north; Wheal Brothers silver lode, underlaying south 3 ft. in a fathom; St. Vincent lode, 2 ft. big, with underlay south 2½ ft.; and the south, or Old Harrowbarrow lode, 3 ft. big, with an underlay 2½ ft. north. The range or direction of the lodes is nearly east and west; the average produce of the copper ore being about 6½ per cent. There are two drawing shafts—one, the engine-shaft, being sunk 61 fms. 3 ft. from grass; the tin shaft being down 28 fms. The adit is 42 fms. at the tin shaft, and 23 fms. at the engine-shaft. The situation of the mine is within half a mile of the granite, in a killas country. Two cross-courses have been discovered in the sett. The present number of men employed is 52; the average wages of underground men being from 55s. to 60s. per month. The workings are principally driving the 33 fm. level west at the engine-shaft, sinking the engine-shaft, and also sinking and rising at Goodluck shaft.

COOMBE LAWN SILVER-LEAD MINES.—This sett is situate in the parishes of South Hill and Callington, nearly a mile west of the latter town. The sett extends about 500 fms. east and west, and 400 fms. north and south, and contains several lodes—nine of which have been opened upon, but only three worked so as to return ore. The mine is carried on under the Cost-book System, and is divided into 1000 shares; nearly the whole of which are held in the county, and a large majority in the hands of one individual. The lodes take a direction nearly east and west, with a south underlay generally—two, however, being north; they vary in size from 2 ft. to 8 ft. The great north lode being from 6 ft. to 8 ft. big. A water-wheel has been erected on the eastern side of the valley 20 ft. in diameter, with 2½ ft. breast, which is applied to drawing the water. Three shafts have been sunk, one of which (that most south) is down 11 fms.; another, 7 fms.; and the more northern shaft, some 3 fms. or 4 fms.—so that the mine may be considered in its infancy. Two adits have been driven; but little work, however, has been comparatively done to make returns, since the last working, when the north part of the mine was seen to a depth of 35 fms. All the lodes contain particles of lead—while from three, some rich ore has been raised; about four or five tons of which is lying at surface. It is proposed to erect additional machinery without loss of time, to prove the mine at a greater depth—the indications which present themselves fully warranting such expenditure.

[*To be continued in next week's Mining Journal.*]

Acting on the invitation, which appears in our advertising columns, we visited, on Monday last, Messrs. Clarke and Varley, of John-street, Cambridge Heath, where we had an opportunity of inspecting several ingenious specimens of mechanical invention, recently completed by them, consisting of three or four working models of their system of atmospheric railway: one an express train, running at a surprising velocity—improved method for cuttings and embankments—a perfect safety lamp, and a "danger indicator," for mines—new plans for raising ores, and for unwatering mines. These inventions, apart from their commercial value, are extremely interesting, and, from the excellence of the workmanship in the models, will well repay a visit by scientific gentlemen resident near London—while, for the information of our country readers, we have made arrangements for each to be described and illustrated in our columns.

The late Brazil news informs us, that in Bahia, a negro had been so fortunate as to find a rough diamond, weighing 7½ oitavas, but was foolish enough to sell it for 300 milreis, about 35*l.* The lucky purchaser had brought it to Rio, and demanded 400,000 milreis for it, or about 45,000*l.*, and which is said to be its actual value.

Original Correspondence.

ON THE PROPER COAL FOR SMELTING SULPHURETTED LEAD AND SILVER ORES.

SIR,—Being in the neighbourhood of a lead mine some short time ago, I was in company with a gentleman who gave a lecture on *galena*—the produce of the mine. I cannot give his ideas clothed in the eloquence of the lecturer; but I feel my memory is not far erring in reporting the matter of the introductory part as follows. It amused me for its truth and quaintness. He commenced (taking from the table a lump of *lead-looking* galena) thus—"Gentlemen, I take into my hand what to all must appear to be a lump of lead: indeed, what else can it be? I have procured such before, and have experimented on it, and you shall hear the result of my experience. I placed it, in order to cast the same into a mould, over my fire, in a melting ladle, and patiently worked away, for a very considerable time, with the large kitchen bellows to make it flow; but, to my great disappointment, I could not melt it. I considered the fire to have been a bad fire, and proceeded to make it anew; and a large and powerful fire I finally obtained; but yet my lead would not melt. What can the cause have been? I procured a small furnace, and succeeded in raising an intense heat; but even at this temperature my metal would not melt. At length I tested it in the powerful heat of a well-constructed reverberatory furnace; and, gentlemen, judge of my surprise—instead of melting into metal, as I expected, it ran into a dark-looking, dense mass of matter, no more like to lead than I am to a *brass candlestick*. As to temperature, I experimented on this in every possible degree, I verily believe; but, although I could soften it, I could not change it from its black, slag-looking state, and I never could succeed in separating any metal from it. Gentlemen (continued the lecturer with much energy), what is my enemy?—Surely some evil thing mars my constant endeavours? What can it be? What is its nature, its habits, its wants? Can it be the vexatious interference of the Father of all Evil opposing me bodily? or has he here instead his *earthy representative*, SULPHUR? Indeed, it must be so. Gentlemen, how he *lug'd* his prey! How to cast out this *evil one* demands the very first attention. Fire wont do it: *no—he is too used to fire*. All the heat of ten thousand times ten thousand of Nebuchadnezar's burning fiery furnaces wont move him. He claws too tightly to be moved by fire: indeed, gentlemen, the greater the heat, the greater seemed the consolidation of the union of this evil one with my wished-for metal."

The effects of heat on sulphurous ores, as here described by the lecturer, certainly are correct. Heat alone, even the most intense, will not separate sulphur from lead, when in a close vessel: it will rather do mischief to your sulphurous ores, and render them less easily treated beneficially afterwards. These ores require to be carefully treated at a proper heat. But more than *mere heat* is necessary. *Oxygen gas* (atmospheric air) is also absolutely essential to effect the separation of the sulphur from the ore. Cold atmospheric air, admitted through your furnace doors, would in smelting be injurious. The oxygen of the air must be admitted of the same temperature as your furnace. The air must pass freely through the fire-chambers of your furnaces, and become of like temperature. A coal, therefore, to allow of this free passage of air, must possess peculiar properties, as hereafter explained. The coal necessary for treating such sulphurous ores as silvery galena must have these peculiar properties. It should be a coal highly charged with inflammable gas (hydrogen). It should, notwithstanding, have the property of a good coke. It should have high heating powers,—and should have the property also of *keeping itself light* in bulk during burning—that is, it must *not bind* or *cake*, like the best Newcastle household coals do. Every lump should keep for a long time (while even at a white heat) its original form, like coke does—and thus keep a very *hollow* fire. Now, the effect of this hollow fire, and the lumps of coal being all independent of each other, like cannon balls in a tub, is, as you will readily understand, that, with the immense draft of the stack, a large quantity of oxygen is, with great facility, admitted between the red-hot independent lumps of coal, and heating the air to its own temperature,—and thus presenting itself in a very favourable state to act on our enemy, the sulphur. There are, of course, many difficult and interesting processes, besides the admission of air, to be performed before you can get the metal to flow; but we are now confined to the subject of coal only. In separating sulphur, *atmospheric air* at *high* temperatures is necessary,—and the way to obtain this is using a coal with the properties before mentioned; and even with this coal, the fire must be constantly attended to.

When the furnace is well heated, the fire must be lifted up to open it, as it were—and this more or less, according to circumstances—to allow a due quantity of air to pass through the burning mass. There requires much experience and judgment in managing this part of the process. The good smelter, indeed, should almost live in the ash-pit. He should put a woollen cap over his head and shoulders, and be ever keeping his eye on his fire, keeping it *duly* hollow (for it wants more or less of this according to circumstances); and it should be open, light, and clear, free from dust or dark, unburning coals; and a proper quantity of large clinkers should be placed on his fire-bars, to admit air freely. The fire-bars should never be allowed to burn any, for the fire should at no time whatever touch them,—for large, well-burnt clinkers should be kept always on the top of them. This keeps the bottom of the fire hollow and open, and atmospheric air can then, with great facility, pass through them into the furnace. The bars themselves, at the beginning of smelting, are put in quite close together; and as the process goes on, and a good heat obtained, these bars are, one after the other, taken out more or less in number, as occasion seems to require. This removal of the fire-bars is for the freer admission of air, and gives room also for the furnace man to *hollow* up his fire, and keep it from choking. Now, a sticky, caking, Newcastle coal possesses all the evils that should be avoided in smelting works. The period of time, too, that the goods are in the furnaces, for this depends on the quality of the coal, is of the very first moment. When ready, not a moment should be lost; but the furnace at once tapped, and the metal and slag allowed to flow out. For with all care, lead, and so also silver, at a temperature lower than is generally supposed, will go off in vapour like steam from water. The quicker, therefore, the process, the better. The foregoing requisites—viz.: carbon for the high temperature, inflammable gas (hydrogen), and which, perhaps, helps to reduce any oxide formed in the process,—and, above all, as positively one of the elements which are actually necessary, atmospheric air (or oxygen gas), to unite with the sulphur, and assist combustion—are all to be sought for in the furnace of the smelter. When longer than the usual time is required for flowing out your charge, in all probability the coals have been bad, and have not been *of the proper quality*; for will any coal furnish you with oxygen gas in quantity? In such delays, and from such causes, want of oxygen gas particularly, *the loss is often very great*, particularly in the continual volatilisation of the metals—in the imperfect desulphurisation of the ore—in the metals (even if separated) being suspended, like figs in a pudding, in the thick, half-heated slag—and probably in much of the ore not metallised at all being mixed with, or suspended in, the imperfectly flowing slag. These evils arise from want of a higher temperature, and from a want of due admission of oxygen gas, which the bad coals would not allow to enter the furnace. *Bad* coal (that is, *bad* for smelting purposes) will keep the goods just in a midway state, between hot and cold—as it were, neither in the clouds nor on the earth—for a very considerable time. Such coals will, perhaps, run your ore into the state before mentioned, of a kind of black slag, by the sulphur not being discharged; and when once in this state the difficulty and expense in *extra* firing, *extra* fluxes, and *extra* heavy labour, &c. &c., are very considerable indeed, and the wear and tear of your furnaces much increased. The heat may have been great,—but the caking coals from their nature *not keeping apart*, with all the care of the furnaceman, will not admit the very essential element—viz.: atmospheric air—to freely pass onwards, and act on the ore. After the whole day's labour, and the time comes for flowing, on examing the produce you find the time and expenses have been all lost, and the *whole mass must go back into the furnace again for another term*, demanding greater care and expense than the first ill-fated attempt. Now, although this kind of midway temperature will not flow your ores, with all your fluxes, yet it will do this very severe mischief—it will, notwithstanding its kind of neutral action, yet send perhaps half your metal into the air, never to be recovered again, and poisoning the whole of your neighbourhood. Indeed, by continuing the use of such, you may volatilise nearly the whole of your metal away, to your very serious loss. Therefore, you see, it is no idle ignorance that demands a peculiar coal; but experience has taught the observant smelter that the best smelting coals are in the end the cheapest—indeed, more than one-third cheaper than any Newcastle coal at the usual price.

Now, as to the nature of the most desirable coal for smelting: it appears that anthracite or stone coal is nearly pure carbon, and free almost from hydrogen and bituminous matters—it is like in nature to wood charcoal. Now, it is evident that this coal would not do for smelting purposes—it affords no hydrogen, and no flame (or flare, as it may be called), which is required, both for heating the ore at a distance from the fire-chamber, and also for acting as a reducing agent besides,—carbon combined with hydrogen (carburetted hydrogen) not being afforded from it (stone coal) in sufficient quantity for the purpose of smelting. This coal is not a *caking coal*, and so far meets one of the requisites of a smelting coal. The Newcastle coal, or bituminous coal, has all the necessary qualities as to *carburetted hydrogen* and *free burning*, that the other (the stone coal) is defective in; but it has the very great evil quality, of itself (as it were) *melting*. It becomes *soft*, and runs into masses, uniting itself together and capping, as it were, the top of the fire with an impenetrable cover. It continues very little time also in a solid form like coke and stone coal will do, but speedily burns away into a powder or ash; whereas the latter coal, the stone coal, will keep its form and figure, and therefore keep a hollow fire very much longer, and admit free passage to the atmospheric air through it, while the other coal will damp up the fire very quickly. A given quantity of stone coal will keep up, having once obtained a red hot, a greater heat for a much longer period of time than will a like quantity of bituminous or Newcastle coal. Neither the first nor the second quality, therefore, meet the wants of the silver-lead smelter. The first gives no flame, but will keep itself hollow—the second gives flame, but cakes into a mass. Neither will a mixture of the two answer the smelter's wants—no mixing together will answer the purposes required. You cannot form thereby a chemical combination—it can only be a mechanical one; and when a mixture of the two are thrown upon the top of a fire, the most bituminous part thereof will burn first, and the anthracite last. The same as if you well mixed together, in small shreds, some linen and worsted, and threw them upon a fire—your linen will be consumed before your worsted; and so with the above coals. At length, you would have an anthracite collection only in your fire-chamber, if you used such a mixture; and, therefore, you do not obtain a desirable smelting fire. Now, if you could form a real chemical combination between these two coals, you probably would have a good smelting coal. The art of man, I believe, has not effected this: however, *Nature*, it appears, has furnished such a combination. At any rate, she has produced a coal with all the requisites before mentioned, as being desirable in a good smelting coal. It is said that, in a coal basin or field, there is a gradual flowing, as it were, or chemical commixture, of one kind of coal into another—that, at one part of the coal basin, the highly bituminous quality shall be found, and at another part of the same basin the pure anthracite coal shall make its appearance—in fact, that a very gradual change of quality is found as the two extremes slowly, as it were, approximated each other. If this be so, a good smelting coal would probably be found about that part of the basin which is equi-distant between the richly bituminous coal, and the stone-like anthracite: probably, the best would be found nearer to the anthracite than to the bituminous formation.

It has been said—"If you burn *twice* or *thrice* as many bituminous or Newcastle coals in smelting, it must be cheaper than buying coals (of the quality above described) from Wales." No greater error on the nature of the coal required, can exist; and for reasons, indeed, above but partially explained. The following may with propriety be added, from a recent report of Mr. Maugham:—"It may not be irrelevant to state, that the average of ashes, charcoal, and volatile matter, of the several samples of the best coking Newcastle and Welsh coal are as follows:—

	NEWCASTLE.	WELSH.
Carbon	0·760	0·777
Ashes	0·054	0·027
Volatile Matter	0·186	0·196
	1·000	1·000

—"Heating power of Newcastle coal is 309, and heating power of Welsh is 312. Hence, we see that the Welsh coal is superior to the Newcastle coal both for coke and gas."—J. M———s: *August* 11.

MINE MANAGEMENT—SALES OF LEAD AND TIN ORES.

SIR,—I am glad to see that my inquiries, relative to the sale of lead ore, have attracted the notice of others concerned in mines, as appears by the letter of your correspondent, "W.," in last Saturday's Journal. Myself being an adventurer in mines to some considerable extent, I am desirous of ascertaining every particular relative to the produce and sale of all kinds of ore or minerals. Your correspondent, "W.," states 17,000 tons of lead ore were sold last year from the mines of Cornwall and Devon—this is a large quantity, but the public are wholly ignorant of where it is produced, or from what mines; but, if it was regularly published in the *Mining Journal*, with the name of the mines, and who buys, it would greatly benefit many outstanding adventurers in those mines. Besides lead, we very seldom hear anything of the sales of tinstuff or ore; yet there is a large quantity of tin raised in Cornwall and Devon: there are also other minerals produced in those counties in which a large number of adventurers are interested. Why every kind of ore, except copper, should be secretly sold, I am at a loss to understand. I have inquired what some kinds of ore sell for per ton, and am told it is contracted for by certain persons, and you can make no sale other ways; then I say, why don't you sell the copper ore by contract, and say nothing about it. The reply is, the outstanding adventurers would not be satisfied with secret sales of copper ore. Certainly, Mr. Editor, I should not be at all satisfied with it, nor am I satisfied with this mysterious sale of lead and tin ores, &c.; and, as far as lies in my power, I mean to exert myself to alter the system, both by correspondence with your Journal, and also by other means. Mining companies are public companies, as much as railways are; inasmuch, that the shares of mining companies are bought and sold by brokers, &c., and transferred similar to railways, and are as often changing hands: therefore, publicity ought to be given to the produce of a mine in all respects the same as the earnings of a railway—the out-adventurers would then be able to see something about the value of their property. Many persons may, perhaps, contend that the present system of selling lead and tin ores is the best, and no change is required, because it belongs only to those who are shareholders; but, I contend, it does require some other mode for selling these ores than the present, because it is not fair, even to the adventurers as a body. I do not mean to charge the managers of any particular mine with dereliction of duty towards the whole body of adventurers—nor do I mean to say, that any managers of mines would withhold publicity of those ores sold for any private purpose of their own; but in all cases of public companies, where either large or small sums of money pass through the hands of the directors or finance committee, secrecy is always objectionable, and liable to great suspicion—consequently, is injurious to the proprietors as a body.

The board of management or finance committee of many mines may tell us, they always sell the lead and tin ores at the best price, and divide the proceeds (less costs, &c.), amongst the adventurers, in proportion to their respective holdings; and what more do you want? I will tell you and them, Mr. Editor, what I want—and I mean to try to get it; I want an honest statement, sent from the mine every week to the *Mining Journal*, of the amount in weight of copper, lead, tin, &c., raised every week: the trouble to the captain to report the amount of the weekly produce would not be much, and I think I can name several sufficient reasons for asking for it.

First.—It would place the whole body of adventurers on an equality, as regards the known value of their shares; but, under the present system of publishing only one metal raised from a mine, and that metal not the most valuable, I contend that the board of management or finance committee have a great advantage over the other adventurers—inasmuch, as I believe it often happens in sinking shafts and driving adits, &c., considerable quantities of lead and tin ores are found and raised, and are known to exist to a great extent in the particular mining sett; but nothing whatever is said about it, and they continue to drive on for copper till it suits the directors, or some of their friends, quietly to buy up the shares from other adventurers at, perhaps, one-third, or even $\frac{1}{10}$th, of their real value. Railway companies have always found it most to their advantage to give a public account of their takings every week; and I can see no reason why mining companies should not adopt the same plan as to ores raised.

Secondly.—The sales of lead and tin ores, &c., not being noticed in your paper, the adventurers have no means of testing the captain's or purser's account of them. I do not mean to charge either purser or captain of any mine with being guilty of any pilfering of lead ore, &c.; but, where no public account is given, I think there is plenty of room for them to help themselves to a considerable extent, to the great injury of the whole body of adventurers, and never likely to be found out; but while the adventurers have been finding money for years, the captain and purser may pocket the profit for nothing.

Thirdly.—The sales of lead and tin ores, &c., not being noticed publicly with the names of the mines it is raised from, and to whom these ores are sold, places the finance committee in a very suspicious position. I do not mean to charge any finance committee with dividing profits of copper ores only amongst the adventurers, according to the shares held by each, and then appropriating the lead, tin, &c., to themselves; but I do mean to say it is quite possible, where the managers are but few, and the adventurers living a long way off, for them to do so, and the rest of the adventurers know nothing whatever about it.

Fourthly.—Having no public account of who sells and who buys these lead and tin ores, &c., the adventurers have no check against the workmen: they may pilfer to any extent they like, and the adventurers know nothing of it; and, as "W." says, these secret, mysterious sales are un-English, and ought to be altered to the satisfaction of the adventurers.

I firmly believe there is considerable fraud carried on in lead and tin ores with a number of mines that are not paying the adventurers now,—but which, under public ticketings and sales, would be found to be producing sufficient of these metals, lead, tin, &c., to pay the adventurers a good dividend monthly for their outlay. The secret sales of these ores are injurious to adventurers in another way: every man in business is liable to losses; and it may happen, from unforeseen circumstances, some adventurer is compelled to sell his shares, and the buyer inquires very properly what the mine produces, when copper is only named, because lead and tin are not known by the seller to be in the sett, yet the same mining sett does produce copper, lead, and tin, in considerable quantities. How much better would it be, Mr. Editor, if the seller could say, this mine produces the above ores, and refer to your Journal for the monthly ticketings and sales of all. The vendor would realise a much larger price for his shares, and the buyer be equally satisfied.

I cannot follow your correspondent "W." to the north of England, to Wales, and the Isle of Man; but I shall be glad of his and your assistance, Mr. Editor, in unrolling this mysterious lead and tin trade. By "W's." statement, the sale of lead ore last year produced 300,000*l.*, which, upon the quantity named, is upwards of 17*l.* per ton. This, I think, is worth looking after, and ascertaining where it is produced from. If many adventurers could only get one ton, or 17*l.* per annum, on each share, it would greatly enliven their spirits. Perhaps, Mr. Editor, there may be some others besides "W.," yourself, and me, who are desirous of more information on this subject; and, if so, I beg leave to invite them to join in the discussion of it. Some finance committees also, and captains and pursers, may be desirous to say a word upon it; but whether for or against my proposition, I shall be glad to see it. By fair discussion we often obtain the truth, and no man need ever be ashamed of that where justice has always been observed.—M. P. R.: *August* 17.

MINE SURVEYING—CHALLENGE—PRIZE PROBLEM.

SIR,—I will thank you to insert the following correspondence in your next Journal, being the result of a repeated challenge given me, in your paper, by Capt. John Prince, of Callington, in the science of mine surveying.

JOHN BUDGE.

TO MR. JOHN PRINCE.

SIR,—With some difficulty I have at last brought you out, by degrees, from your lurking places, and now have you before the public, in the open field. It was not enough that I knew who you were from the beginning, and could identify you under all the fictitious names which you have used; for the purpose of shooting your malignant aspersions in ambush. Why will you thus do all in your power to prevent the progress of knowledge, by becoming the reckless advocate of ignorance? Depend upon it, Sir. Prince, you will ultimately gain nothing but popular contempt, by setting yourself against the truth. But enough of this: let us now proceed to action. By all the laws of honour, I, as the *challenged*, am entitled to the choice of weapons, or the first shot, and herewith send a practical problem, or surveying traverse; and when you have wrought out the true solution, I will receive, and endeavour to solve, any practical mine surveying question you may send. Let our respective questions and answers appear at length in the Journal, that the mining public may not only judge of our qualifications, but may also have the benefit of our exertions on this occasion. As, in your last public letter, you recommended the propriety of showing how to avoid *magnetic attraction* underground, I have, in the following problem, given you an opportunity of acting on your own advice, and showing to the mining world that you are capable of performing this invaluable branch of subterranean surveying.

PROBLEM.—A new downright shaft (William's) has been pitched, and we want to drive a cross-cut, to come under and rise against it, at the 60 fm. level. The surface survey from *start* downright shaft to *William's* shaft is as follows:—

Drafts.	Right Hand Dial.					Ft.	In.
1—Angle	316½°	—Elevation	11°	18′	—Length	45	6
„	342	ditto	7	25	„	55	9
3 „	330½	—Horizontal	—		„	63	4
4 „	311½	—Depression	9	15	„	42	7
5 „	321	ditto	13	40	„	33	2

tocentre of William's shaft, at the surface.

This finishes the surface work, and we now drop the *start* vertical shaft to the 40 fm. level, which we find to measure (including back above adit) 52 fms. 4 ft. 4 in. There being a railway, or tramroad, in the 40 fm. level, we are under the necessity of dispensing with the compass and magnetic needle, because of the *attraction* of the rails, and have used the theodolite rack-work circle, with vernier limb, or index. The graduation of the instrument is from left to right, and the following is the register of the drafts through the level—viz.:

						Ft.	In.
Drafts 1—Promiscuous angle		66°	37′	—Length		24	10
2	„	„	75	18	„	22	7
3	„	„	58	10	„	27	5
4	„	„	64	55	„	36	6
5	„	„	152	15	„	33	9
6	„	„	144	27	„	29	10
7	„	„	157	45	„	41	8
8	„	„	163	29	„	26	0
9	„	„	149	12	„	30	4

Here we arrive at an underlaying shaft, sunk to the 60 fm. level, which, having a lift of pumps in it, we are compelled to continue our survey without the aid of the needle. The analagous bearing of the shaft is 81° 23′ declination, or dip 27° 12′, and inclined length 22 fms. 3 ft. 9 in. to the bottom of the 60 fm. level. We now continue our survey in the 60, which is as follows:—

Draft, 1—Promiscuous angle, 159° 35′—Magnetic bearing, 267° 52′—Length, 97 ft. 6 in. end.

There being no railway in the 60 fm. level, we have taken the first, and only, chance we have had of setting the needle free, and in action, and find the bearing to be 267° 52′, as stated above, and by which we have data for determining the polarity of all the other drafts; and as this draft in the 60 reaches to the end from whence the cross-cut is to be driven, we are now come to the question—What will be the exact length and bearing of the cross-cut to come under the centre of the new (or William's) shaft, and what will be the depth of that shaft at the 60 fm. level?

I have given you this little survey, Mr. Prince, in as plain and explanatory a manner as if it had been for one of my pupils; but if there should be any thing incomprehensible to you, send me a note of inquiry, and I will explain it. Possibly, you may say, this is a contemptible prize problem to give a *professor*—but you know it is not good jockeyship to start at the top of our speed; besides, we would let the young *Mining Journal* students have the full benefit of this series of practical operations, and not discourage them by soaring too high at the onset. I shall expect to see the solution at length, with "the why and the wherefore," in the Journal next Saturday se'nnight; so you see I have regard to your *numerous engagements*, by giving you time enough to compute 20 such things as this. If you can contrive to put it in this week, so much the better.

Callington, August 10. I am, Sir, yours, &c., JOHN BUDGE.

The foregoing, Mr. Editor, was delivered to Mr. Prince on the 10th inst., and on the 12th I received a note from him, of which the following is a verbatim copy:—

TO MR. JOHN BUDGE.

SIR,—I had thought my last letter was sufficiently explicit respecting the nature of the challenge which I had made to you; but, as you appear to view it in a different light, I repeat, that I have neither time nor inclination for theoretical writing; and now plainly and finally tell you, that I am ready at any time to dial against you any piece of ground you may think proper to point out. I remain, Sir, yours, &c.,

Callington, August 12. JOHN PRINCE.

To this note I sent the following reply:—

TO MR. JOHN PRINCE.

SIR,—I have received your surrender. I have you now in the open field, Mr. Prince, and will bring you before your judges—the mining public—when your shifts, subterfuges, and doublings, will not cover the disgrace of your audacity and notorious defeat. So, then, Mr. Consistency, you have not "*time*" for theoretical operations, but you will go through a course of dialling with me, which would occupy tenfold more time than is required by a competent man to compute a trigonometrical survey! Why don't you try to speak the truth for once, and, instead of saying you have "neither time nor inclination," plainly say, "you have not *ability*," which is the real fact; for, after two days tug at this question, you find the bargain *too tight* for you, and then *run the pitch, or turn house*, and say, "Oh! this is not what I meant!" You, in effect say, "Let us dial for a rise against a shaft that is coming down, or some such job, and *wait a year or two*, until the shaft is holed, that the public may know which of us is right!" Doubtless, such a *respite* you "devoutly wish," but you may expect to be dispatched by a shorter cut. I appeal to the numerous subscribers and readers of the *Mining Journal*, whether the course I have proposed is not the proper and *only* course to test the abilities of a mine surveyor; for, you *ought to know*, that, after going any piece of dialling, by taking the angles and measuring the lines, the *theoretical* part, as you call it, must of necessity be gone through after all. Hence you are left without excuse. It is well known that the mechanical part of dialling, or merely measuring the lines and angles, is an operation so plain and simple, that any person can do it after seeing it once done. The whole difficulty, art or science, is to work out the results mathematically and demonstratively, after the lines have been taken and proved. We know that any common jack tar can take the wheel, or helm, and steer the ship, as he is directed, on her various tacks or courses; but it is the man of science—the "practical navigator"—who must take these various sailings, and find by them the longitude and latitude, or the true place of the ship—and so it is precisely in mine surveying. The fact is, Mr. Prince, you never intended to compete with me—you are not quite so insensible of your own deficiency as to attempt it, notwithstanding all your contemptible bluster, boast, and insolent challenge. You would shuffle off an hundred times from any test that would reveal you in your true colours. The warning given you of the fate of "Bob Acres," you should have profitted by, and kept snug in your old concealment behind the bush; for, surely, the mining world will acknowledge, that "Bob" and "Dud" make "a pair," and the *white feather* is equally conspicuous in both.

Callington, August 13. I am, Sir, your more than match, JOHN BUDGE.

Mr. Editor, I beg to observe, that, if no one else does it, I will send the solution of the foregoing problem, with the mode of performing it, for the benefit of your young mining readers, who are aspiring for the *reformed agency*, now in reversion. This is an invaluable branch of mine surveying, and but little understood.—JOHN BUDGE: *Callington, Aug.* 14.

TUTWORK AND TRIBUTE.

Sir,—In your last publication, Mr. Budge says "the merits" of the "Tutwork and Tribute" question, is "now at rest," and (allow me to add) would always have been so, had his disturbing hand not raked it up, as an instrument with which to spatter his venom, in all directions, upon the poor mining "captains," who, by some means, have given an unpardonable offence to this great luminary, and who has at last come forth in all his splendour to enlighten the hitherto benighted and ignorant mine adventurers, mine agents, and all connected with mining pursuits. People are occasionally to be found, who believe themselves to be the *only* wise and sane persons in the world; but when they form such an opinion, and begin to act upon it, their friends consider it time to be looking after their safety; and, if possible, to prevent their doing much mischief. It is to be regretted, that in almost all topics discussed in the *Mining Journal*, personal abuse takes a rather prominent part; it cannot, however, be supposed that in this case, when such uncalled for and unjustifiable censure is scattered in all directions by Mr. Budge, his opponents can be expected to be too mealy-mouthed. I have never been a mine captain; but have had sufficient opportunities of knowing their worth, to be able to pronounce Mr. Budge's statements to be most foul libels on a very worthy and meritorious class of men. But to the question of "Tutwork and Tribute." I have had a little acquaintance with "owners' account" work, in business where the amount of labour done is more easily ascertained than it can be in that of mining; and I have no hesitation in saying, that when the master's eye is not present, not more than two-thirds the work is done (frequently not one-half) that would be done, if the work were let by the piece or job. I am confident, that no mine in England would long continue to work on "the owners' account" system. However clever Mr. Budge may think himself, and however ignorant he may be pleased to consider the mine captains, he must be aware that his proposition, and the arguments by which it is supported, must, through the *Mining Journal*, be carried to all, or nearly all, connected with mining pursuits in the United Kingdom. That *some* of the mine *adventurers* must be men of business, and possessed of common sense, and (notwithstanding the prejudice which I admit generally attends a change of system), whenever there is anything good brought forward, *some* have discrimination enough to adopt it. Will any one mine, out of the hundreds at work in Cornwall and other parts of England, with Ireland, Scotland, and Wales into the bargain, adopt Mr. Budge's plan? If *one* mine do so, and continue it, I will then consider the question as a debateable one; but if "one and all" say the project is an insane one, I, with others, will allow Mr. Budge to fight with shadows as long as he pleases, and to write down all the (mining) world asses, so long as his doing so will add to his own satisfaction, and pamper his own vanity.—J. W.: *Mold, August* 17.

TUTWORK AND TRIBUTE.

Sir,—From the commencement of the controversy respecting "Tutwork and Tribute," which I have carefully perused in your Journal, I have been anxiously waiting to see some arguments brought forward by Mr. Budge, to corroborate his wild assertions; but, instead of doing so, he has digressed into personal abuse, which I presume is a trait in his character. It appears evident, that he cannot adduce one single argument, which would in any degree tend to substantiate his assertions. I very well remember some very important circumstances, which came under my notice some years ago in one of the most extensive tin mines in this county, relative to "Tutwork and Tribute *v.* Owners' Account;" for some time after the recommencement of the last working, all the tin stuff in the mine was "spelled" on Mr. Budge's favourite system, "owners' account;" when some 12 or 14 men were constantly employed, and an agent almost incessantly with them; but, after some time, it was all let by contract, when, remarkable to relate, not one-half the number of men were afterwards employed to do the same amount of labour, without being constantly under the watchful eye of an agent. That circumstance alone ought to be quite sufficient to satisfy the most prejudiced mind on the subject of "owners' account." But there are others of still greater importance. Not long before the above circumstance occurred, the mine became very poor, so that the greater portion of the "tutwork" in the mine was stopped, and the continuance of the mine depended entirely on the prosperity of the tribute pitches, the greater number of which were working at the "standard tribute" (greatest tribute which is given); and fortunately for the adventurers, as well as the public, when it was most needed, and the mine apparently almost on the verge of being stopped, a very important discovery was made by a pare of tributers, in a place were scarcely anything was thought about, until the discovery was made, which continued the main prop of the mine for at least five years; after which the mine became again very poor, and things looked very gloomy respecting it—and the continuance of the mine still depending on the tribute pitches, when a similar circumstance occurred, which prolonged the continuance of the mine for several years. And, subsequently, a third similar circumstance occurred—so that the last 15 years of its working may be justly attributed to the three important discoveries, to which I have just alluded, by the speculations of tributers in old pitches at the "standard tribute," in places where they could not see a certainty of getting one shilling per month at the onset, but which actually profitted to the adventurers upwards of 40,000*l.*, besides the vast amount of employment during that period to all classes therewith connected. But the question may arise, would not those discoveries have been made on the "owners' account" system? I positively answer in the negative. The adventurers would not allow a single man to be put at either of those places on tutwork prior to the discovery; nor would they, in one or two cases, even allow a single shilling to encourage the tributers in their speculations, any other than the tribute given; and infinitely less would their speculations have been, had that detestable system of "owners' account" been established, which, in its most limited extent, has been the destruction of so much public property in every extensive mine in this county. In fact, the workings on that mine would have been terminated within 12 months of its commencement on the "owners' account" system; whereas, on the economical system of "tutwork and tribute," it continued working upwards of 20 years. Instances of this nature are constantly under the miners' notice; and yet, amidst such glaring facts, Mr. Budge boldly asserts the "fixed wages system" to be the best of all systems, without even attempting to experimentally or theoretically prove it, which is quite dishonourable to a man of his *profession*. I would recommend him to visit some of the most extensive mines in the county, and minutely examine the present system of management; and, at the same time, have the good sense and precaution to discard all prejudice and personal abuse, and adopt in its stead reason and sound argument—and I think he will arrive at very different conclusions.—B. S.: *Liskeard, August* 12

TUTWORK AND TRIBUTE.

Sir,—John Budge has found it necessary to show us the other side of his picture; and, instead of continuing to throw others in the shade by his black tone of colouring, he has commenced the necessary work of touching up his own portraits, and of bringing out more forcibly those lines which he conceives are the best calculated to produce effect, and to prove it to be the likeness of a clever and well-instructed man. In undertaking this task, I do not think he will be more successful than he has been in his denunciation of the system of "Tutwork and Tribute;" but he will be less liable to give offence, than by applying the black brush to the portrait of others, and that will be something gained in the progress of the discussion.

John has suggested a change to be made in the mode of employing men in mines; but, instead of proving, or attempting to prove, by argument or from experience, that his view of the question is a correct one, he has been driven to the alternative of flourishing forth his qualifications, in order to impress upon the minds of the public, that he is an experienced and practical miner. He tells us, that for nearly 30 years, he has been engaged in mining—that his knowledge of the whole routine of mining business is well known—that his attainments in the higher branches of science, on which the well conducting of a mine depends, is extensively known—that he has inspected, surveyed, and planned, many mines—that he has been engaged in inspecting, reporting, and surveying mines on the continent, and so forth. But what has all this to do with the question of "Tutwork and Tribute?" He may be as clever in all those departments connected with the working of mines, as he thinks himself to be, and yet be totally incapacitated from giving an opinion upon the best and most economical mode of employing men; and his proposal for substituting the present agents, who are paid eight guineas per month, by a parcel of inferior men, as watchers or overlookers, who are to be paid four guineas per month each, is an evidence of the truth of his not being a man whose judgment is to be depended upon. Why employ watchers or overlookers to be always in attendance, if the men would work as they should do, if left to themselves? Could anything, then, be so condemnatory of his proposition to employ men by the day, as that of being compelled to employ others to be constantly watching them? As a wind up to his qualifications for managing the workmen, he informs us, that he was employed as the "chairman at the celebrated trial of Austin's steam-engine, at Fowey Consols, some 10 years ago:" that is, he and two or three others were appointed to attend a trial of that engine, for the purpose of ascertaining what duty it performed by the consumption of a bushel of coals—on which occasion John was placed in the chair, whilst the others sat, no doubt, upon stools; probably, by this time, they have discovered them to be stools of repentance. But how can this have anything to do with the employment of men underground? It is just possible—indeed, I should say it is probable—that John has jumped at this conclusion—that because the engine did more duty whilst that conjunction of wisdom was placed to watch over it, than it ever did before, or has ever done since, watching day labourers underground, would get more labour out of them than could be got by being employed on "Tutwork or Tribute;" but it does not follow that he must be correct. But, if the men are employed by the day, you can dismiss them at a moment's notice, if they did not perform their duty, which you could not do under the contract law. But why should he, or what is there that compels him to dismiss a man at a moment's notice? It could only arise from the fact, that the man's pay was going on for the time he was engaged, whether he performed his labour or not—consequently, there was no inducement to exertion; whereas, on the contract system, those who may be employed know that idleness is a positive loss to them; that if they do not work they will not be paid—so that there is the great, indeed, the paramount, inducement to exertion; yet we are called upon by John to throw away this self-acting and stimulating principle, and to substitute it by coercion, merely that we may retain the power of dismissing a man. What a very nice situation the watchers would be placed in. Every moment of their time, whilst underground, would be employed in quarrelling with the men; for nothing is, or can be, more difficult to decide than the question, what is a fair day's work? and to expect that any man, who by occasional visits in the course of a day, would be able to decide this question, is to betray a degree of ignorance which no experienced miner would ever be guilty of. It is found in every department of labour, that one man will perform a greater amount of work than another can possibly do; and in mining this is conspicuously the case: therefore, unless an overlooker stood constantly by the side of the workman underground, I defy him to say whether the man had been idling his time or not. What a very pretty sight it would be to see the men coming up from underground one after another, in the middle of the day, dismissed by the watchers on account of their not performing impossibilities. Why, no person in their senses, one would think, would ever advocate the placing of the workmen in such a position, when they could be bound by contract. If the men could be dismissed at a moment's notice, so could they dismiss themselves.

John tells us, that there is no occupation so well calculated to give a man a thorough knowledge of the nature of lodes, and the most advantageous manner of working a mine, as the surveying department. Will he allow me to say, that he is mistaken in this assertion. It suits him, do doubt, to endeavour to prove, that that with which he is best acquainted is the most perfect—"there is nothing like leather;" but I beg to assure him that although surveying is a necessary part of good mining, practical experience, in which he is deficient, is of much greater importance. John adds, that by surveying he has often discovered the destructive consequences of the contract system. How he can prove this, I confess I am at a loss to understand; and I am certain that he is positively incorrect. In surveying mines he has, doubtless, discovered errors; and it is one of the provinces of the surveying department to detect them—and as long as mining is carried on, there will always be errors made; but that they are attributable to the contract system, I fearlessly deny, and defy John to prove it. Any person would suppose, from reading his letter, that when a man takes a tutwork bargain, he goes underground from day to day, and pursues his own plans, and drives or sinks in whatever direction he pleases, without any kind of control or superintendence, until his contract be completed. Nothing can be further from the truth than such a view of the question. The man is as much under the control and direction of the agents, as he would be were he working as a day labourer, superintended by John's four guinea watchers. The agents visit him, if not every day, at least three or four times in the course of the week; and if any errors are committed, they are not attributable to the contract system, but to the want of judgment in the agents: the only thing left to the discretion of the man being to break the ground in the way that may be most advantageous to himself; and in doing so some men have greatly the advantage over others, and will earn more money by the same kind of labour.

John, in a former letter, alluded to errors that have been committed by driving on the wrong lode, or on the wrong part of the lode, where a separation of the lodes or branches may have taken place; and I, in reply to him, remarked, that they were errors inseparable from the difficulties of mining, which have occurred and which continue to occur; but when he attributes this to the system of contracts adopted in mines, he asserts that which he knows to be positively incorrect, or he must be thoroughly ignorant of what is, and has been, going on underground. It is in this instance, as in that which I have before referred to, the error of the agents, and an error for which they cannot be blamed, or which John's "attainments in the higher branches of the science" would not enable him to prevent. Whilst he refers to the few instances in which courses of ores have been overlooked, he takes care to keep out of view the many hundreds, I may say thousands, of fathoms that have been driven as cross-cuts, in search of lodes supposed to exist under such circumstances, but without success; and unless he can discover some method by which it may be determined where lodes and courses of ores are always to be found, without opening the ground in search of them, the same errors will be found to occur. That tutwork bargains may be carried on by day labourers no one will deny; it is only the absurdity of such an employment of manual labour that is objected to; but how will John employ men by the day in pitches—that is, in places which are now worked upon the "tribute" system? Probably, many of your readers do not know what is meant by a "tribute" pitch. It is a piece of ground of a certain length, and also of a certain height and depth, as may be defined at the time, which a man is permitted to work on for a limited period, generally two months, for the purpose of breaking ores, and for his labour he is paid a certain poundage, upon the value of the ores produced—in some instances only 6*d.* in the *l.*, in other instances as much as 16*s.* in the *l.*, according to the quantity of ores expected to be met with. Now, it often happens that a man will take a piece of ground in which there may be no, or scarcely any, appearance of ores; but, from certain indications, or from some hope of its turning out more ores than its appearance would indicate, he will venture upon it, because he can get a high tribute—say 16*s.* out of every 20*s.* worth he may discover; and thus, whilst a small quantity would pay him his wages, a large quantity would produce a large sum of money. Here the ingenuity of the man is excited, and his peculiar knowledge of his work, and of the nature of the lode upon which his efforts are made, will naturally direct him to the points which are most likely to fulfil his hopes and expectations. In some instances success attends his efforts, but in numerous instances disappointment is the result. It is frequently the case, that men will embark in those undertakings for want of other employment, and without such means they would not be employed. Now, then, place this man upon day wages to work this pitch under the direction of an overlooker, and what would become of his skill and judgment?—of what benefit would it be to him? He would work upon the part of the lode to which he was directed by the agent, without caring whether he broke ore or waste. There would not be the least inducement for the exercise of any skill or knowledge he possessed; and yet we are told by John, that the day system is the only system by which the best energies of the miner can be engaged on behalf of his employer, and that all disinterested and unprejudiced men will agree with him in this view of the question. But, suppose the "tribute" system should be abolished, is there an agent in Cornwall, or in any other mining district, who would feel himself justified in employing men upon daily wages, to work the ground that would demand a high tribute? Not one; no agent would think of such a thing. Where there are courses of ores that may be broken without any other requirement in the men than the knowledge how, and the ability, to break the ground, it is usually done upon tutwork; but in the parts of the lodes in which there are irregular deposits, no agent would dream of setting it upon "tutwork," or of employing daily labour upon it, and the consequence would be, that thousands of men would not find employment, and thousands of tons of ores would never be brought to the surface, which, otherwise, would afford a maintenance to a starving population, and profits to those who may be embarked in mining speculations. Talk of a day labourer exerting his knowledge, his skill, and his ability, in behalf of his employer, in a greater degree than he would do if employed in a way that such skill and ability would benefit himself!! Why, all the men that have ever written upon the subject must be fools, if John is a wise man. Human nature has always been deemed to be a selfish compound, and to guard against the consequences of this feeling we have been taught the duty of doing to others as we would be done unto; but, if John's doctrine be true, the Cornish miner certainly requires to be instructed to take care of himself, and not to waste his strength for the benefit of others. John possesses the happy knack of converting everything to his own purpose—even a defeat into a victory; for he has discovered that the "mouth" of those who have taken a different view of the question from his own, "testifies against them respecting the wide spread evil of working mines by tutwork and tribute." Thus, whilst they have been intending to express their dissent from the proposition he has made, he has contrived to draw from it a confirmation of his views; and then, to confirm still further his interpretation of their opinion, he compares them to monkeys, who had "nearly hugged their own cub to death;" in the first instance, adopting the "cub" as belonging to his menagerie, and then holding it up to the world as being only fit to be stuffed. John has, however, played the bear to the monkeys, and has not only threatened to hug his "cub" to death, but his proposition to substitute four guinea agents for eight guinea ones, to be employed in watching day labourers, has so completely knocked the breath out of it, that no effort to produce resuscitation will ever succeed—it is gone, past recovery.

What a piece of deception that was, which was practised upon the two engines at Redmoor Mines, to permit them to go on "slashing away at the rate of six or seven strokes per minute, without letting them know that the men were not at work!" How they must have hissed and groaned when they discovered this deception. And then, again, the public dinner at Lamberroe Mine, at which the captains (I presume some of those ignorant, conceited, upstart, fellows referred to by John in a former letter) "with about 70 of their friends (ladies and gentlemen) were present!" These things, no doubt, were the consequence of the tutwork and tribute system, at least so John informs us: but I am inclined to think, that the dinner party was only engaged by the day, and as they, no doubt, performed good labour and did good duty, one might have expected this instance to have been named in favour of his day labour plan; but some people will not be satisfied. I think that the evil will be found to exist in John's not being invited to the dinner. Probably, there was a tribute pitch the day following, to pick over the halvans, which soured John's temper. Be this how it may, I am perfectly satisfied that John shall adopt the system of the new school, but must still claim the right to remain,

London, August 5. One of the Old School.

TUTWORK AND TRIBUTE.

Sir,—There has been so much controversy for some time about "Tutwork and Tribute"—which, I must confess, is beginning to grow sickly—however, by your permission, I will endeavour, to make a few remarks. Mr. Budge still argues in favour of the "owners' account" system, which, in my opinion, is erroneous—for instance, suppose we adopt the "owners' account" system for one year, what would be the consequence?—why, our active intelligent miners would no longer be the same kind of men, they would get dull, stupid, and inactive—and for why? I answer, for want of enterprise: what is it that expands the mind but enterprise; put the mining operations into the "owners' account" system, and in the next age our fine athletic, industrious, and intelligent miners would get degenerated. Why, Mr. Budge ought to know, that only fixing a good workman on owners' account for a few months would make him lazy and careless, and with all the vigilance of the captain, he would hang on the chain, because a captain cannot be always with him. A practical thorough-bred owners' account man at the surface, in a cold winter's day, would rather run the risk of taking a bad cold, than he would use sufficient exertion to keep his blood warm—then, what amount of labour would be done, according to the same ratio, underground, especially in our deep levels, which are in general very warm. Mr. Budge seems to throw the greatest stress on the agents, especially in his letter which appeared in the Journal of the 8th inst. Speaking of the roughly hewn agents, as he termed it, he says, it is by their means, as being incapable of their offices, that has greatly injured the proprietors of the land, independently of the adventurers, by sinking and driving to useless purposes, which tends to discourage the adventurers by such enormous outlays; and the manager, finding a great failure in the financial affairs, directly condemns the mine as not worth working any longer. Now, I think this is a great error with Mr. Budge: what man in his right senses, after being taken from the pick and gad, and advanced to the situation of an agent, would try to turn himself out again by useless expenditure (the incapability of the agents in general is not so bad as has been represented by Mr. Budge, especially on that point); it seems more reasonable, that they would try to use as much economy as possible, in order to keep the mine afloat, and to keep themselves in office. I think, if Mr. Budge had more deliberately considered the matter, he would never have sent his first letter on "Tutwork and Tribute," to be inserted in the Journal; but, however, it is now evident that he still persists in the plan, because he cannot extricate himself, and he tries to catch hold of something to bear himself up.—A Miner: *Camborne, August* 17.

ADULTERATION OF FLOUR.

Sir,—As your columns are open to all questions of a scientific nature, I request your insertion of the following facts, which will, perhaps, obtain the notice of some of your chemical readers. As the subject is one which affects a whole community, more particularly the poor, I have no doubt your patriotic and able correspondent, Dr. Murray, will oblige me by a solution. Some flour was used in my family, on Sunday last, to make a pie-crust, which evidently appeared something more than the production of the corn-field. On endeavouring to work it, it became more and more harsh, would not hold together, but crumbled under the attempt to mould it; it was with the greatest difficulty it could be rolled out, cracking and crumbling at the edges, and drying rapidly; every means known were adopted, and it was at length, after a fashion, completed—when baked, it crumbled under the knife and was altogether useless. Supposing it might be adulterated with whitening, chalk, bones, or other carbonates of lime, I next day obtained some sulphuric acid as a test, yet not the slightest effervescence ensued; but on standing for about three or four minutes, the portion mixed with the acid became a perfectedly blood red slimy paste—here, however, my knowledge of analysis was at an end, and I shall esteem the following information a great favour:—Might it not have been adulterated with gypsum (sulphate of lime), and, in such case, would the acid employed have any effect? What would be the test to discover plaster of Paris, or any other ingredient, with which flour is too often adulterated? Such information, publicly given, would be of much utility, as any suspicion of adulteration might at once be set at rest.

Goswell-road, August 13. A Mechanic.

THE ELECTRIC TELEGRAPH—PARAGRELES.

Sir,—It appears that the electric wires on the South Western Railway, connected with the telegraph, were rendered inefficient during the late thunder storm, and that the dial of that at the Gosport terminus was also, by the lightning, altogether deranged, and had, of course, become useless. So far from being surprised at these events and effects, the only wonder is, that a similar catastrophe has not occurred long ago, and, indeed, does not frequently happen. Every post along the line, through which the electric wires are threaded, should be supplied with a *copper wire*, resting in a groove ascending two or three inches above the post, and entering the earth to a depth of 18 inches. I need not say that this wire must, by no means, touch the electric wire (which should be perfectly insulated); but be as far distant from it as possible—this will act on the principle of the paragreles. Had paragreles been attached to the various conservatories and hothouses, &c., in the vicinity of London, and in the metropolis itself, the devastation would have been inconsiderable, and, perhaps, the destruction of glass entirely averted. This fearful storm will be long remembered for its wide-spread desolation.

The paragrele has been employed, as I believe, with unquestionable success on the continent of Europe. It is founded on the simple principle, that the formation of hail is an electric phenomenon—it is a miniature lightning rod, and therefore requires to be multiplied. It consists essentially of a pole, like that used in hop plantations, a copper wire about $\frac{1}{4}$th of an inch diameter is inserted in a groove its entire length, surmounting its top two or three inches, and entering the ground below about 15 to 18 inches. If the length of the pole be 20 feet, the Paragreles should be 60 feet apart; double the radius is assumed to be the protecting power of a *good* conductor, but it is safer to contract the extent—the expense of each need not exceed three or four shillings. I have had two erected—one at each end of my greenhouse—and I fear no evil from hail-storms. The terminus, where an electric telegraph is worked, above all other places, should be protected by a lightning conductor; though, strange to say, it seems never to have been thought of. J. Murray.

Portland-place, Hull, August 10.

HAIL STORM.

Sir,—The hail storm which lately occurred, and has produced such disastrous effects, particularly in the metropolis and its vicinity, reminds me of that which took place at Leicester in 1835. The havoc and destruction of glass was immense; but the most extraordinary phenomenon attendant upon it, was the circumstance, that many of the fragments of ice (and some were of incredible size) contained as their *nuclei* what were called "wire worms." A gentleman at Leicester showed me two, which he had obtained from dissolving the icy fragments in water, and which he had preserved *alive* for several days; I ascertained that they were the *gordius*, or "horse-hair eel." One gentleman picked up a fragment of ice, which he represented to be "as long as his stick." J. Murray.

Portland-place, Hull, Aug. 17.

CONCENTRATION OF SULPHURIC ACID.

Sir,—I see by the *Mining Journal* of the 8th instant, that Mr. Jones, of Bristol, has obtained a patent for a new method of concentrating sulphuric acid—viz.: by encasing the glass retort in a metallic covering. The frequent fracture of the glass retorts employed in this process, and the consequent loss of the acid, is so serious an affair, as to induce several manufacturers of sulphuric acid to use retorts entirely made of *platinum*, which, though costly at the outset, is ultimately found to be the most economical. One manufacturer at Rotherham, in Yorkshire, has two platinum retorts, *each* of which cost 1500*l.*! Fragments of platinum introduced into the retort, tend to prevent the fracture of the glass, arising from unequal ebullition. In the possession of Messrs. Elkington, the electro platers of Birmingham, I have seen a Florence flask encased in copper, the deposit of the electro process—a method which, it then occurred to me, might be admirably adapted to the glass retorts employed in the concentration of sulphuric acid.—J. Murray: *Portland-place, Hull, August* 15.

THE SALT TRADE.

At a meeting of the Chamber of Commerce of the White Salt Trade, held at Northwich, on Thursday, the 13th August,—W. Worthington, Esq., in the chair,—the following resolutions were passed:—

It being highly desirable for the interests of the salt trade of this country, that the Indian markets (whose annual consumption is at least 250,000 to 300,000 tons) should be fairly opened for the admission of British manufactured salt, which can be supplied of a far purer quality, and at much lower rates, than that produced under the East India Company's system—

Resolved,—That each salt manufacturer in Cheshire and Worcestershire, be requested to use his personal interest, individually as well as collectively, to abolish a monopoly so injurious to the interests of the salt trade of England.

That, as the admission of British salt into India intimately affects not only the price, but also the supply, of Bengal sugars—and is, likewise, of the greatest importance to the shipowners and manufacturers of this country—it is advisable that a letter be drawn up and forwarded by the chairman of the Salt Chamber of Commerce, to the chairman of the Shipowners' Association in London and Liverpool—the East India and China Association—the Manchester, Liverpool, Bristol, and Glasgow Chambers of Commerce—requesting their aid and assistance, separately and collectively, as well as that of the individual members of the various chambers and associations over which they preside, in order to abolish a monopoly so fraught with mischief to the manufacturing, shipping, and commercial interests of England, as well as so injurious to the moral, domestic, and political economy of the people of India. And in order that an accurate knowledge may generally be diffused of the working and effects of the salt monopoly in India, 150 copies of Mr. D. C. Aylwin's salt pamphlet be forwarded to each of the above gentlemen, with a request that they will distribute them amongst such shipowners, manufacturers, sugar-refiners, and merchants, as they may deem most interested in the Indian trade, or most likely to take up and advocate this question.

That, as it is desirable the Board of Control should be petitioned prior to applying o Parliament for redress, a deputation from the salt proprietors of England shall as soon as possible be formed; and that this chamber be requested to place itself in communication with the chairman of the Shipowners' Association in London and Liverpool—the East India and China Associations—the Manchester, Liverpool, Bristol, and Glasgow Chambers of Commerce—to request their active co-operation in submitting to their various chambers and associations the propriety of uniting in one common body, to petition the Board of Control to abolish a monopoly which is equally prejudicial to the interests of all.

That circular letters, with the above resolutions attached, be forwarded to each member of the salt trade, with a request that, with as little delay as possible, a list may be furnished to the Chamber of Commerce of such individuals to whom each member may wish a copy of Mr. Aylwin's salt pamphlet to be forwarded.

That a general meeting of the salt trade of England be called for Monday, 31st August, at the Angel inn, Northwich, at one o'clock; and that Mr. Aylwin be respectfully requested to attend such meeting.

Improvements in the Narrow Gauge Locomotive.—We learn from what may be considered competent authority, that a new narrow gauge engine, far superior to the present narrow guage locomotives in speed and power, has just been completed. It is stated to be equal to an average speed of 60 miles per hour with a train of 12 carriages, or about 66 tons. We hope to be able very shortly to give the details of the working of this new engine.

Railways in Devon and Cornwall.—At the meeting of the Launceston and South Devon Railway, under the Dissolution Act, it was resolved, by 1900 shares, that the accounts should be passed and the company dissolved.—Prior to the termination of the proceedings, it was stated by Mr. Gill, M.P. (chairman of the South Devon Company) that it had been resolved, Mr. Brunel should, generally inspect the counties of Devon and Cornwall, with a view to complete, in connection with that company, and, perhaps, the other associated companies, the railway communication required by the counties; but whether this would be attempted in next session of Parliament he could not say. It was also stated that the confidence of the South Devon directors in the atmospheric system was stronger than ever.

Railway Traffic.—From our official returns, it appears that the amount of traffic, for the last week, on nearly 1800 miles of railway, was 174,860*l.*, thus accounted for:—100,342*l.* for the conveyance of passengers only, 30,888*l.* for the carriage of goods, and a remainder of 43,185*l.* for passengers and goods together, not respectively apportioned; being an increase over the corresponding week of last year of 13,100*l.*—*Railway Chronicle*, of this day.

Current Prices of Stocks, Shares, & Metals.

STOCK EXCHANGE, Saturday morning, Twelve o'clock.

Bank Stock, 7 per Cent., 208 9	Belgian Bonds, 4½ per Cent., —
3 per Cent. Reduced Ann., 95¼ 6	Dutch, 2½ per Cent., 59⅝ ¼
3 per Cent. Consols Ann., 95¼ ⅝	Brazilian, 5 per Cents., 89½ ¾
3 per Cent. Annuities, —	Chilian, 6 per Cents., —
3½ per Cent. Ann , 97⅛ 8	Mexican, 5 per Cents., 22½ 3
Long Annuities, 10 7-16	Spanish, 5 per Cents., 25½
India Stock, 10½ per Cent., 259½ 60	Ditto Deferred, —
3 per Cent. Consols for Acc., 95⅛ ¼ ⅛	Portuguese, 5 per Cents., 85
Exchequer Bills, 1000*l.*, 11 14 10 pm.	Russian, 5 per Cents., 113½

MINES.—Transactions in British mines have not been so extensive this week as we usually find; but we are induced to believe that the market is firmer. Several large transaction in East Tamar Consols have been done this week at an advance of price; but there has been no particular demand for other mines. Shares in the following mines have changed hands this week:—South Basset, West Trethellan, West Basset, West Wheal Jewel, Herodsfoot, Treleighs, Trewallack, Wheal Agnes, East Tamar, Concord, Wheal Walter, Kirkcudbright, Devon and Courtney, Cruddock Moor, Trehane; and in foreign mines, Copiapo and Alten, of which there are still buyers.

RAILWAYS.—In the share market the settlement, on Monday last, went off very satisfactorily, though larger than for some time past, and stock has been very plentiful in the market, but business extremely heavy, with a decided disposition to sell, while there are scarcely any buyers. This disposition has not been confined, nor is it even most marked, in speculative transactions in scrip shares, but is felt chiefly in those connected with the permanent registered companies, and which, therefore, evinces a strong desire on the part of the holders to realize their stock. One chief cause, which contributes at this moment to a heavy market, is the fact of the numerous new companies which are now calling upon the scripholders to register their shares, and the expectation that calls will soon be made very generally by these companies. The chief transactions have been in Birmingham and Oxford Junction; Buckinghamshire; Great North of England; Great Western; Liverpool, Manchester, and Newcastle Junction; London and Brighton; South Western; and a few others.

MEETINGS.—On Saturday last the first meeting of the Wharfdale line was held at Leeds, the object of which was to receive the report, and the proposal for leasing the line to the Leeds and Thirsk Company.—The half-yearly meeting of the Richmond was held on Tuesday, the report having been read, which was satisfactory, considering the short time the line has been open. The meeting was then made special, for the purpose of considering the expediency of leasing or selling the line to the London and South-Western Company. The resolution was agreed to.—A meeting of the Oxford, Witney, Cheltenham, and Gloucester Independent, was held also at the London Tavern, to consider an agreement to be entered into to unite with the London, Oxford, and Cheltenham. The arrangement was agreed to.—A meeting of the London, Brighton, and South Coast Railway was held at the London-bridge station, on Wednesday last, for the purpose of amalgamating those lines with the Croydon. The agreements were read, and resolutions adopted unanimously to that effect.—A very full meeting of the Liverpool shareholders in the Edinburgh and Glasgow, was held on Tuesday, at Liverpool, to receive a deputation from the Manchester shareholders, and to adopt measures to secure a more efficient board of directors, to protect the interests of the concern. Upwards of 2000 shares were represented, exclusive of those from Manchester; a resolution for a deputation at the ensuing meeting at Glasgow was agreed to.—A meeting of the Waveney Valley and Great Yarmouth, was held at the London Tavern, on Thursday, under the Dissolution Bill; a resolution, that the company should not be dissolved, was carried unanimously.—The second half-yearly meeting of the Madras was also held at their offices, Winchester-buildings, for the purpose of receiving the report, and the transaction of general business.—A formal meeting of the Shrewsbury and Herefordshire Railway Company took place on Friday (yesterday), at the offices of the company—it being necessary that a meeting should take place under the provisions of the Act. William Ormsby Gore, Esq., M.P. (chairman), having explained the object of the meeting, resolutions reappointing the directors were unanimously adopted.

Parliament has pledged itself to the establishment of a judicial railway board whose power shall be omni-directive in all processes of amalgamation, general superintendence, routine, and revision. A bill, in the interim, is to be brought in, investing the new tribunal with powers like those of the Board of Trade. On Tuesday night there was another Royal commission of bills, *in cumulo*—they were 34 in number. Amongst them the Gauge and Deodends Bills were gazetted, and the following railways:—Caledonian, Pollock, Govan, and Clydesdale Junction amalgamation; Huddersfield and Manchester Railway and Canal (Oldham branch); Liverpool, Dunkirk, and Preston; West Riding Union (No. 2.), Manchester, Bolton, and Bury Canal, and Manchester and Leeds amalgamation.

HULL, THURSDAY.—The share market has been steady since our last, but the London quotations, received this morning, have not had a tendency to improve the tone of the market. Hull and Selby halves seem good for investment at 39½ to 49¼, with the final call of 10*l.*, which has not affected the price much. North British better, owing chiefly to the issue of new stock, which will shortly take place. The North Staffordshire, and North British (Carlisle settlement), the former on Tuesday, the latter to-day, have both passed off well. In the last-named stock, the transactions on our Exchange have been numerous and heavy—in fact, our market for this particular stock is the largest, without exception, in the kingdom.

Proceedings of Public Companies.

MEETINGS DURING THE ENSUING WEEK.

THIS DAY.....Newry, Warrenpoint, and Rostrevor Railway—offices, at One.
Furness Railway—offices, at Eleven.
MONDAY.....London and Croydon Railway—London Terminus, at One.
TUESDAY.....Tretoil Mining Company—offices, at One.
Northern Counties Union Railway—London Terminus, at One.
General Steam Navigation Company—offices, at Two.
Pontop and South Shields Railway—offices, at One.
Legal and General Life Assurance Society—offices, at One.
Gloucester, Aberystwith, & Central Wales R'way—offices, Twelve for One.
WEDNESDAY..Patent Kamptulicon Company—offices, at Twelve.
South Wales Railway—Paddington Station, at Twelve.
Cornwall and Devon Central Railway—London Tavern, at Twelve.
Guildford Extension and Portsmouth and Fareham Railway—Nine Elms Station, at Twelve.
Buckinghamshire Railway—Euston Station, at Twelve.
Worcester, Tenbury, and Ludlow Railway—London Tavern, at Twelve.
THURSDAY....Callington Mining Company—offices.
Irish Waste Land Improvement Society—King's Head Tavern, at One.
Lynn and Dereham Railway—London Tavern, at One.
Ely and Huntingdon Railway—London Tavern, at Three.
Londonderry and Enniskillen Railway—offices, at One.
Sligo and Shannon Railway—offices, at Two.
Whitehaven and Furness Railway—offices, at One.
Greenwich Steam-Packet Company—Ship Tavern, Greenwich, at Three.
FRIDAY.....Oxford, Worcester, and Wolverhampton Railway—Worcester, at One.
Droitwich Patent Salt Company—King's Head Tavern, Poultry, at Two.
Londonderry and Coleraine Railway—offices, at One.
Armagh, Coleraine, and Portrush Railway—London Tavern, at Twelve.

[*The meetings of Mining Companies are inserted among the Mining Intelligence.*]

ALFRED ASSURANCE COMPANY.

The first quinquennial meeting of this company was held at the offices, 7, Lothbury, on Wednesday.—Sir DAVID SCOTT, Bart., in the chair.

The advertisement calling the meeting was read by the SECRETARY, after which

The CHAIRMAN said—Gentlemen, it is usual, on occasions like the present, to introduce the report by some observations; but, gentlemen, I am exceedingly reluctant to trespass upon your time, because I believe a statement will be submitted to you, that will contain every information you can possibly desire. I will commence, gentlemen, my very short address, by assuring you that the directors have much pleasure in meeting you on this occasion, and that feeling is increased, because we are enabled to submit to you a report which we consider will be satisfactory to you in every respect. You are aware, gentlemen, that the Alfred Association has not only had to strive, in common with other offices, against considerable competition, but we have also had to contend against those prejudices and difficulties which invariably present themselves to establishments of recent existence. You will find, however, gentlemen, that we have been particularly fortunate; for, although we have issued 700 policies, only 13 deaths have occurred, and though the insurances amounted to 600,000*l.* our losses have not exceeded 10,000*l.* There, therefore, will be a very satisfactory bonus on the policies now in existence. By the rules and regulations under which the Alfred Association was established, it was provided that, during the first seven years, the interest on the subscribed capital should be confined to 4 per cent. That period having elapsed, 5 per cent. will be dividend hereafter paid upon that stock. I am not aware that I need trespass any longer upon your attention, yet I am desirous of assuring you that the directors have always kept in view the interests of this association, and that they have exerted themselves to the utmost to promote its prosperity. You must be aware that there must be an end to individual influence,—although, perhaps, there may not be an end to individual exertion. The directors having most zealously, I repeat, endeavoured to perform their duty, and having the satisfaction of seeing this office placed in its present respectable position, are anxious, your interests being identified with the interests of the office, that you should recollect that good wishes alone are nugatory—that there is not one among us, however powerful, that does not require assistance, and that nothing can so much promote the prosperity of the association, as a cordial and energetic co-operation.

The SECRETARY then read the following report:—

The directors have much pleasure in submitting their first quinquennial report to the members of the association.

The statements hitherto submitted, have been necessarily confined to accounts of the general transactions of the association, and of its annual receipts and expenditure; on the present occasion the directors are enabled to lay before the meeting, in addition to these particulars, the result of their operations from the commencement, and to state the precise degree of success with which they have been attended. The balance-sheet, which exhibits in detail the assets and liabilities of the association, and which has been examined and approved of by the auditors, is laid on the table.

The annuity fund progresses favourably; but, as the directors anticipated at a former meeting, it will not yet admit of any increase in the rate of annuity at present payable.

In the life department, the total number of life policies issued is 703, the amount assured by them being 606,566*l.* Of these there have elapsed, by decease of the lives assured, the remarkably small number of 13, the claims under which have amounted to no more than 10,250*l.* Of the existing policies, a careful valuation has been made, and a rigorous estimate formed of the society's contingent and reversionary property, and for its various other assets; and after reserving an ample fund to provide for future liabilities, the directors are enabled to declare a dividend or bonus on the proprietors' capital of 12 per cent. on the amount of capital paid up. The proportion of surplus allotted to the assured in this association is large; and the additions to be made to the assurances are, consequently, very considerable. Thus, the addition to a policy for 2000*l.* effected in 1839 on a life then aged 24, will be 238*l.* To a policy for 3000*l.* effected in the same year on a life, then aged 30, 340*l.*; and to one for 5000*l.*, on a life then 29, 539*l.* 16s. These additions will be found to approach to nearly 65 per cent. on the premiums paid; and are, the directors believe, as large, if not larger, than any office, *cæteris paribus*, has hitherto been able to afford—a circumstance partly attributable to the very low rate of mortality which has prevailed amongst the assured, and partly to the great economy with which the office has been conducted.

As soon as the requisite calculations are completed, each assurer will receive a notice of the amount of bonus to which he is entitled, and will also then have the option of applying it in the reduction of the annual premium, should that arrangement be preferred.

The directors trust that this statement will afford general satisfaction, and that it will strengthen and confirm the confidence which the public already repose in the resources and stability of the Alfred Association.

The CHAIRMAN then moved, that this report be adopted by the meeting, which was seconded, and unanimously agreed to.—Mr. DUNNAGE then moved, seconded by Mr. SMITH (a barrister), that the sum of 900*l.* (instead of 600*l.*, as formerly) should be annually divided among the directors, which motion was unanimously agreed to.—The Hon. ELIOT YORKE, M.P., returned thanks on the part of the directors, for the confidence which this vote implied.—A formal vote of thanks to the directors, for the able and zealous manner in which they had managed the affairs of the proprietors, was then moved by Mr. DUNNAGE, and carried by acclamation.—The CHAIRMAN shortly acknowledged the compliment, after which the meeting separated.

PILBROW'S ATMOSPHERIC RAILWAY COMPANY.

The adjourned general meeting of the proprietors of this company was held at the London Tavern, on Monday the 17th inst.—Mr. JONES was called to the chair.

Mr. LEMAN (of the committee of inquiry) read the report. It appeared from it, that the committee, having been assisted by Messrs. White and Borrett, and having examined Messrs. Collins and Pilbrow, arrived at information to the following effect:—That the object of the company was to introduce a new principle by Mr. Pilbrow, for which he had a patent, but that the project had been abandoned, as the last meeting was in December, when the directors agreed to pay Mr. Pilbrow by the delivery of 4500 10*l.* shares fully paid, and 1000*l.* in money was paid to him early in June, 1845. That Mr. Pilbrow had stated to the committee that he had proposed to take the balance of the money in paid-up shares, but that for some reason no notice was taken by the Board of this mode of settling, and that, afterwards, he was informed in a letter addressed by the board, that the subject was under their consideration. That Mr. Pilbrow claimed 14,000*l.*, and threatened legal proceedings. It also appeared from the report, that the number of shares to be issued was 60,000 The company claims to be registered by deed, but was not registered with companies, according to the Act, until November, 1845. All the moneys received, except 900*l.*, were received on or prior to that time, including sums of 140*l.* and 300*l.*, paid on the 23d of May to Messrs. Cox, before which payments no money was standing to their account. The directors (according to the Act) had no right to take shares until they had registered. On the 24th of May they sanctioned the drawing of a check to pay the expenses already incurred. In the letter-book of the company there appeared a letter to a stockbroker, which, it appeared from a meeting of directors, they did not sanction. It also appeared that, on the 17th of June, 4570*l.* was all that had been received on shares. That 200 were sold at a premium, when by far the greater number were not issued. That the minutes showed entries to the effect, "that Lady B——— have 140 shares at par." That shares were sold at a premium, and parties permitted to sign the deed as if original shareholders, though the 1*l.* deposit was not placed to the credit of the company. That a large number of shares was issued on which the deposit was not paid, and that the deed was signed for more than 15,000, when there was only 5400 received. That the directors had from 600 to 1000 shares each, the secretary 2500, and the auditor 400, on which the audit was not paid. That the Earl of Essex, the Earl of Bessborough, and another director, had offered to pay 1000*l.* each. (Hear.) It also appeared (said the report), that a lady signed the deed for 1000 shares, on which nothing was received, and that two ladies had signed for 2000, whose signatures were not binding. (A laugh.) That Mr. Collins, the secretary, had issued 7000 shares without the company having had any deposit, and borrowed money on them. That Mr. Pilbrow had told the committee, that he stated to the directors, that he had reason to suspect there had been an improper issue of shares, and had called attention to the issue of 2500 shares by Collins at a premium, which was now the subject of a Chancery suit arising from Collins having become bankrupt since the above transaction. That the directors, however, denied the statement of Mr. Pilbrow, with respect to his having called their attention to the subject. The report then proceeded further to state, that the directors had voted themselves 10 guineas each attendance, but that the Earl of Essex, the Earl of Bessborough, and another director, had returned it since. That a salary of 700*l.* a year had been voted to the secretary, and part of it paid, before the registration of the deed. That the directors ordered weekly meetings, though there did not seem to have been any business done; and that they also issued an order, that the solicitors were not to attend unless specially summoned. That shares on which no deposit was paid was issued to the officers of the company, and the amount could not be ascertained. That fictitious shares were issued.—The report concluded by expressing, as the opinion of the committee, that the directors had been guilty of neglect, and were not justified in spending any portion of the deposits while so small an amount was paid up With respect to the conduct of the secretary (Collins), the committee consider it to have been at least "reprehensible," in regard to his unauthorised dealings in shares for private purposes. The committee, however, do not wish to excuse the directors from all blame—but think that, if they had behaved properly, they would not now be so much involved. The committee have not communicated with the directors, who appear to have abandoned the project.—A long discussion followed.

Mr. F. BRAITHWAITE explained his connection with the company, of which he had been acting engineer. He was in no way mixed up with the improper transactions of the company. He had received 1000 shares for his professional services, and still held them.

Mr. GOODMAN had bought 30 shares at premium for 48*l.* 15s., having been told at the office that they were at premium, and found they were worth nothing. He had never signed the deed; and when he had asked about it at the office, he was told that he got it it under very peculiar circumstances. (A laugh).

Mr. COLLINS defended his conduct. Measures had been taken to support the scheme, and it had been rendered necessary by the getting up of other companies to carry out Pilbrow's principle. A great many false assertions had been made about him, and endeavours to crush him.

Mr. WHITE defended the three directors for whom he appeared, as having been deceived by the servants of the company. There was no doubt that irregularities had taken place in the company.—Finally, it was agreed that the committee should endeavour to negotiate with the directors, and with that understanding the meeting was adjourned for three weeks.

We quote the foregoing report from the *Morning Chronicle*, as also the following explanatory statement:—"Mr. C. Collins, the late secretary of this company, appeals against our report of the proceedings, and observes that, if allowed to go forth without an explanation, it would be admitting their truth, and subject him to the censure and animadversion of the public. Believing that we have no wish to crush a fallen man, he offers the following explanation—the latter part of which is a brief biography from the unfortunate narrator himself, abounding in evidence of the baneful effects superinduced by over speculation, and which it is to be feared is only one out of the many melancholy wrecks that have been drifting over the surface of society since the panic:—"I had," says the narrator, "an interest of nearly 40,000*l.* in this company, arising from a share in the patent. I received but little more than 14,000*l.*, and this in scrip, paid-up shares; the remainder was to be paid up at a future time. Such was my confidence in the invention, that I would not sell a share only when compelled, and this compulsion arose from a scarcity of means to carry out and promote those companies whose sole object was the adopting Pilbrow's principle. One of the allegations is, that I sent out shares surreptitiously, and never paid the company the deposit. What occasion had I to do this? I could have sold at one time the whole of my shares at 20s. premium. For six months have they, by advertisement and every other means they could think of, been endeavouring to discover the truth of these allegations, and yet I cannot find they have produced one. I had a *carte blanche* from the directors to work the market, but the whole amount ever paid, including commission, &c., was only 325*l.*—not, as they state, 500*l.* I deny *in toto* any misappropriation of any moneys or shares I was not strictly entitled to. I exchanged some of my paid-up shares for single ones, but this I considered I was at perfect liberty to do. I have since found this was wrong; but still there was, or should be, a property of mine in the company of so large an amount, that would be a guarantee for any misuse or misappropriation of shares. I admit I have, in the exuberance of my zeal to serve the company, acted with imprudence; but I cannot admit, that the directors or officers of this company have acted morally wrong. What has been done has been with the best intentions, and I believe our only crime will be found to be not raising the shares to a premium of 5*l.* or 6*l.* per share. I consider I have been cruelly used; unfortunately one of the first victims of the railway panic—for some a scape-goat, for others a target, and ever since the victim of a foul and base conspiracy. Having unfortunately given up business as a merchant, which I conducted successfully for 20 years, to embark in these visions of riches, I have lost my all, and have now to commence the world again; let me, therefore, beg you will do me the justice to disabuse the public mind, or at least ask them to suspend their judgment."

DURHAM AND SUNDERLAND RAILWAY.—In consequence of the passing of the Act to enable the Newcastle and Darlington Junction to purchase the Durham and Sunderland Railway, a meeting of proprietors in the latter company was held at Sunderland, on Monday, to confirm the agreement made by the directors with Mr. Hudson, in December, 1845. The Newcastle and Darlington Company are to take upon themselves every liability; and pay for every 50*l.* share, 31*l.* 10s. There are 5440 of these shares, and the liabilities are estimated at about 120,000*l.* Resolutions empowering the directors to carry out the agreement, and appointing Christopher Bramwell, Esq., to receive payment on behalf of the proprietors, and divide the money ratably among them, were carried unanimously. It was stated, that the purchase money would be paid about the 1st of Jan. next.

LONDON AND BLACKWALL RAILWAY.—The half-yearly meeting was held at the London Tavern, on Tuesday—J. N. DANIELL, Esq., in the chair. The directors' report was read. It stated that the available balance for the half year is 5080*l.* 10s. 2d.; admitting of a dividend of 2s. per share, clear of income tax. There is a diminution both in the number of passengers, and the receipts from them during the past half year. This is partly accounted for by the issue of annual and season tickets, yielding 798*l.*, included in the revenue account, but not appearing in the traffic. The returns on wharfage exhibit a favourable result. Though the capitalisation of the debenture debt is only beginning, there is a saving of 473*l.* on the half year's interest account. The arrangements with the steam-packet companies are satisfactory. Though the South Essex Railway Bill has failed, so has the North Gravesend: every effort will be made to retain to the Blackwall proprietary the traffic of the left bank of the Thames. The bill for uniting the Birmingham Railway with the East and West India Docks is now in the Lords: arrangements have been made with the promoters to secure the interests of the company. The report of the commissioners on Railway Termini, against the extension of railways within certain limits round the City, leads the directors to believe that the Blackwall will soon become the London terminus for all lines north and east of the metropolis. The chairman prefaced his motion that the report be adopted by a speech that was a mere echo of it. A conversational discussion of no moment ensued, and ended with the adoption of the report, and a vote of thanks to the directors.

LONDON AND WESTMINSTER BANK.—The directors hereby give Notice, that a DIVIDEND of THREE POUNDS PER CENT. upon the paid-up capital of the company, being after the rate of £6 per cent. per annum, will be PAYABLE on and after the 10th of September next, at the bank, Lothbury, without deduction for income tax, which will be paid by the bank.
By order of the board,
Lothbury, July 30, 1846. JAMES WILLIAM GILBART, General Manager.
The transfer books will be closed from the 18th of August to the 10th of September. 38

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.—The SIXTEENTH MEETING of the British Association for the Advancement of Science will commence in SOUTHAMPTON, on Thursday Morning, the 10th of September, 1846. JOHN TAYLOR, F.R.S., General Treasurer.
2, Duke-street, Adelphi, London. 39

Just published, 8vo., with Six Maps, and Three Plates of Fossils, 4s.,
QUARTERLY JOURNAL OF THE GEOLOGICAL SOCIETY, No. VII. CONTENTS:—
Mr. Prestwick on the Isle of Wight.
Captain Vickary on the Beloochistan Hills.
Mr. Darwin on the Falkland Islands.
Mr. Lyell on the Alabama Coal-Field.
Mr. Sharpe on North Wales.
Mr. Cumming on the Isle of Man.
Professor Ehrenberg on Infusoria in Volcanic Ashes, &c.
London: Longman, Brown, Green, and Longmans. 40

Just published,
AN EXPOSITION OF THE DANGERS AND DEFICIENCIES OF THE PRESENT SYSTEM OF RAILWAY CONSTRUCTION, with SUGGESTIONS FOR ITS IMPROVEMENT. By C. H. GREENHOW.
John Weale, 59, High Holborn.
Models, illustrating the principle, may be seen at No. 3, Lothbury. 41

Just published, price 4s.,
FOUR SYNOPTIC TABLES ON RAILWAY LOCOMOTION.—Compiled by N. ALPH. BURNIER.
1. Comparative Advantages of the various Systems of Railway Locomotion.
2. Theory of Atmospheric Railways.
3. Special Exigencies of Atmospheric System, as regards its Practical Working.
4. Comparison of the various Apparatus for Working Atmospheric Railways.
London: John Weale, 59, High Holborn. 42

ATMOSPHERIC RAILWAY.—A full-sized MODEL of CLARKE and VARLEY'S PATENT RESILIENT TUBE ATMOSPHERIC RAILWAY is NOW BEING WORKED, at 8, JOHN-STREET, CAMBRIDGE-HEATH.—The days of working are Tuesday, Thursday, and Saturday, from Twelve o'clock till Five.—Gentlemen interested in railways, engineers, and scientific men, are particularly requested to examine for themselves. 43
*** John-street is about two miles from the Bank—omnibuses run to and from every quarter of an hour.

ARMAGH, COLERAINE, AND PORTRUSH RAILWAY.—Notice is hereby given, that a SPECIAL GENERAL MEETING of the shareholders in this company will be HELD at the London Tavern, Bishopsgate-street, on Friday, the 28th day of August inst., at Twelve o'clock at noon, for the purpose of taking into consideration the terms of agreement for amalgamation entered into with the committee of the Dublin, Belfast, and Coleraine Junction Company, and affirming the same or otherwise.—Scripholders who have not signed the company's deed, and desire to attend the meeting, must send in their application for that purpose to the secretary, on a form to be obtained at the company's offices, on or before Wednesday, the 26th inst. 44
In the event of the shareholders not considering it desirable under present circumstances to confirm the agreement for amalgamation, the committee will take immediate steps to dissolve the company, under Lord Dalhousie's Act, and to return 1*l.* per share to the scripholders. By order. WILLIAM GALT, Secretary.
Offices of the Company, No. 14, Ironmonger-lane, London.

SLIGO AND SHANNON RAILWAY ACT, 1846.—Notice is hereby given, that, pursuant to an Act of Parliament, passed in the 10th year of the reign of her present Majesty Queen Victoria, session 1846, intituled, "An Act for Making a Railway from Lough Allen to Lough Gill, both in the county of Leitrim," to be called the "Sligo and Shannon Railway," the FIRST GENERAL MEETING of the shareholders of the Sligo and Shannon Railway Company, thereby incorporated, will be HELD at the offices of the company, Winchester-house, Old Broad-street, London, on Thursday, the 27th inst., at Two o'clock P.M., for the purpose of proceeding to carry the said Act into execution.—Dated this 11th day of August, 1846. 45
By order, W. R. ORMSBY GORE, Chairman.
A. GOLE, Secretary.

SLIGO AND SHANNON RAILWAY—REGISTRATION OF SHARES.—Notice is hereby given, that the Act for the Incorporation of the Sligo and Shannon Railway Company having received the Royal Assent, all persons holding scrip certificates for shares in this undertaking, are requested to transmit the same to the secretary for registration, at this office, on or before Wednesday, the 26th day of August, with their names, residences, and description, distinctly written, in order that the same may be correctly entered in the register of the company. All shares not claimed by actual holders of scrip certificates, on or before the said 26th day of August, will be liable to be registered as the property of the persons to whom they were originally allotted. Forms of letter claiming to be registered, may be had at this office. The scrip may be sent, without risk, in registered letters; and, for greater security, the parties sending may write across the face of each certificate their names, and the words "for registration," forwarded for registration. The secretary will give an acknowledgment for the scrip, and, on completion of the registry, will exchange the same for certificates under the seal of the company. W. R. ORMSBY GORE, Chairman.
A. GOLE, Secretary. 46
Winchester-house, Old Broad-street, August 12, 1846.

CAMERON'S STEAM COAL AND SWANSEA AND LOUGHOR RAILWAY COMPANY.—Notice is hereby given, that the DIVIDEND for the quarter ending on the 24th June last, will be PAYABLE on and after Wednesday, the 26th inst., at the office of the company here. By order of the board of directors.
2, Moorgate-street, London, August 10, 1846. A. C. HOWDEN, Secretary. 47

STEAM COAL—WITHOUT SMOKE, as per experiments made at her Majesty's Dockyard, Woolwich.
CAMERON'S COALBROOK STEAM COAL, AND SWANSEA AND LOUGHOR RAILWAY COMPANY.—(Completely Registered and Incorporated.)
OFFICES—2, MOORGATE-STREET, LONDON. 48
The directors are now prepared to supply steam ship companies, manufacturers, shippers, and others, with the company's steam coal, either at the company's wharf at Swansea, or in London. A statement, showing by comparative trial the superiority of this coal for steam purposes over every other, and a scale of prices, may be had on application at the company's offices here, or at their wharf at Swansea.—March 18, 1846.

STEAM-ENGINES.—From 8 to 20-horse power ENGINES ALWAYS IN STOCK.
Apply to Mr. CAPPER, ENGINE-MAKER and FOUNDER, BIRMINGHAM. 49
Price.....£14 *per horse-power.*

HALEY'S PATENT LIFTING JACK.
MANUFACTURED SOLELY BY
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The attention of parties who employ LIFTING JACKS, is respectfully requested to the superiority of the above over those hitherto in use. It will lift either at the top or below —having a claw, the same as the rack jack. Its parts are made in the most accurate manner—*each working piece being engine-cut.* Notwithstanding its superiority, in point of workmanship, and combining utility, safety, durability, and neatness, the cost is not more than that of the rack jack, of rude manufacture.

Amongst the advantages which it possesses, the following may be enumerated:— 50
1. It is about *half the weight* of the ordinary rack jack of equal power.
*** This is most important, as the ponderous nature of the rack jack is one of the main objections to it, requiring *two*, and often *three*, men to carry one of moderate power; whereas, one of the improved jacks (capable of lifting five tons), can be borne with ease by *one* man.
2. The handle (working similar to the rack jack) *may be let go with the lift on*; and although it has neither ratchet wheels or any other mode of securing it, it will not run back, but remains stationary, and quite safe.
3. Its parts are few, and simple (made entirely of wrought-iron, and case-hardened).
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No. 2 size—to lift 2 tons	£6	0	0
„ 3 „ „ 4 „	7	0	0
„ 4 „ „ 8 „	9	10	0
„ 5 „ „ 12 „	12	0	0
„ 6 „ „ 16 „	15	0	0

DOMESTIC BREWING—the PATENT CONCENTRATED MALT AND HOP EXTRACT, enables PRIVATE INDIVIDUALS to MAKE FINE HOME-BREWED ALE, WITHOUT EMPLOYING ANY BREWING UTENSILS.—It has only to be dissolved in hot-water and fermented.—Sold, in jars, from 1s. to 7s. 6d., and 14s. 6d., by the BRITISH NATIONAL MALT EXTRACT COMPANY, 51
7, NICHOLAS-LANE, LOMBARD-STREET; Petty, Wood, and Co., 53, Threadneedle-street; Wix and Sons, 22, Leadenhall-street; Batty and Co., 15, Finsbury-pavement; De Castro and Peach, 65, Piccadilly; Hockin and Co., 33, Duke-street, Manchester-square; and all respectable oilmen and grocers.—Also, may be had, gratis,
I. REMARKS ON IMPROVEMENTS IN BREWING, by using the Patent Malt and Hop Extract, enabling families to brew without brewing utensils.
II. INSTRUCTIONS FOR BREWING from the Patent Malt and Hop Extract.
III. OPINIONS RELATIVE TO THE MEDICINAL PROPERTIES OF MALT AND HOPS.
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